

California State Journal of Medicine.

Owned and Published Monthly by the
Medical Society of the State of California

PHILIP MILLS JONES, M. D., Secretary and Editor
PUBLICATION COMMITTEE

Fayette W. Birtch, M. D. René Bine, M. D.
Wm. P. Lucas, M. D. Sol. Hyman, M. D.

Advertising Committee:
R. E. Bering, M. D., Chairman
Thos. E. Shumate, M. D.

ADDRESS ALL COMMUNICATIONS

Secretary State Society, - - - Butler Building,
State Journal, - - - - - San Francisco.
Official Register, - - - - -

Telephone Douglas 2537

IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be
Typewritten.

Notify the office promptly of any change of address, in
order that mailing list and addresses in the Register may
be corrected.

VOL. XIII

JUNE, 1915

No. 6

EDITORIAL NOTES

AMERICAN MEDICAL ASSOCIATION MEETING.

As we have previously mentioned in the JOURNAL, the A. M. A. is to meet in San Francisco during the third week of this present month of June. The House of Delegates will begin its work on Monday, and the scientific sections will begin their programs on Tuesday afternoon, Tuesday morning being given over, as always, to the general public session which will be held in the Columbia Theatre, Geary and Mason streets. Wednesday was set aside by the House of Delegates as a special memorial day to commemorate the work in medicine and collateral science which led to the possibility of digging the canal; for the canal was dug by scientific medicine and not by picks or steam shovels. Just what will be the nature of these commemoration exercises we do not know as the special committee having that matter in charge have not announced their program at the time of writing. There will also be meetings of a number of more or less related bodies, as the American Academy of Medicine, the Therapeutic Society, etc., notices of which meetings have appeared in this JOURNAL in previous issues or will be found elsewhere in the present number. Altogether, the month of June will be quite a busy month, speaking of things medical, and any member will find it much to his advantage and betterment to arrange to spend the latter half of the month in San Francisco. Dr. F. B. Carpenter is Chairman of the Committee on Hotels and if you intend to come to San Francisco for these medical meetings, as of course you do, you had best write to him at once and secure hotel accommodations as all the hotels are now, and more especially will be at that time, crowded. His address is Head Building, San Francisco.

REPORT APPLICANTS.

Again we must urge county society secretaries to report to the State Society office the names of applicants for membership. In the last few weeks we have received notice of three new members, elected to membership in various counties, and it is absolutely certain that none of them would have been elected had the facts in our possession been known to the secretary of the local society. When a man is once in, it is not easy to get him out, and membership in the county and State Societies now means a good deal; a good deal to the member and a good deal to the Society, for any member may be the cause of an expense of thousands of dollars. The weakening of the medical practice law, which continues bravely on from legislature to legislature, will surely mean an influx of undesirables and a lowering of the value of any sort of license to practice. It will also mean, if we make it so, the vastly increased value of membership in a recognized county medical society. Keep that thought in mind.

MEDICAL PIRATES CONVICTED.

For a long time past the Federal Government, through the Postoffice Department, has been getting evidence against a number of licensed medical pirates. Incidentally, it may be said in passing that this JOURNAL has for years held that the licensed physician who is doing wrong or practicing his profession in a disgraceful manner, is infinitely more dangerous and harmful than the unlicensed person be he Chinese "herb specialist" or any other variety. But the licensed crook is hard to get. Generally he follows some one of the several lines of quackery that have been carefully worked out by clever lawyers and are thus held just within the letter of the law. Such as the advertising of cancer cures, for example, which particular thing was carried to the Supreme Court of California, some years ago, and it was by that court held that the quack was within the letter of his legal rights. But it seemed probable that many of this gentry might be caught through the misuse of the mails, and so that was tried with distinct success. There are still a number of men to be accounted for and so the details of the cases will not be taken up until all are ended. Suffice it for the present, that every case that has thus far been taken into court has resulted either in conviction or in the quack pleading guilty. In this work in California, the Federal authorities were greatly helped by the State Board of Medical Examiners.

NAVY MEDICAL CORPS.

An examination for appointment to the Medical Corps of the Navy will be held about July 6th, 1915, and a gist of the requirements, etc., will be found elsewhere in this issue. Examinations are usually held at the various navy headquarters near, or in, the cities of Washington, Boston, New York, Philadelphia, Norfolk, Charleston, Chicago, Mare Island and Puget Sound.

AMENDMENTS TO THE MEDICAL LAW.

The office of the State Board of Medical Examiners has kindly furnished us with a summary of the principal changes made in the law regulating the practice of medicine. The salary of the Secretary may now be made \$3,000. As will be seen, the trend of legislation is downward, which was of course expected. Also, we have more kinds of licensed people doing things to the anatomy of other people, for the board now licenses chiroprodists. It does not specify, however, that one must have a license in order to have a corn to be chiroprodisted; that is a sad omission and certainly should be rectified at the next session of our marvelous legislature—that is, unless another "state song" comes along by that time and takes up too much of their high-priced time. As Dr. Pangloss said, this is indeed the best of all worlds. And he might have added, the most amusing!

"Several amendments have been framed and passed by the Legislature now in session and having been signed by the Governor become effective on or about July 24, 1915.

"These amendments known as Senate Bill 443, Benson, make the following changes:

"1. Combines office of Secretary and Treasurer.

"2. Provides that the *Board* publish a directory of every person holding a certificate to practice in this state.

"3. Establishing sub-offices in Los Angeles and San Francisco, and proving that legal action against the Board may be taken in either of these cities.

"4. Provides for the appointment by the Board of qualified commissioners of examination.

"5. Provides for a per diem to members of the Board for correction of examination papers.

"6. Establishes an additional form of certificate to be issued to chiroprodists designating the educational standard to be exacted of chiroprodists.

"7. Reduces the curriculum for a P. & S. certificate to 4000 hours, the number of hours in each subject being prescribed by law.

"8. Reduces the number of hours required of drugless practitioner applicants to 2000 hours, the number of hours in each subject being prescribed by law.

"9. Prescribes the curriculum to be pursued by applicants for chiroprodist certificate.

"10. Re-arranges the subjects of examination for drugless practitioner certificate in order that the Board may determine the additional number of subjects to be taken by the holder of such certificate in order to acquire a P. & S. certificate. The subjects of such examination are specifically stated.

"11. Prescribing the subjects for examination for qualification for a chiroprodist certificate.

"12. Providing for the issuance of a certificate to the Army and Navy.

"13. Modifying the reciprocity feature.

Demands one year residence in the state issuing the certificate used as the basis of the application.

"14. Adding to the unprofessional conduct classifications. Making two additional causes for revocation: first, excessive use of cocaine, morphine, etc.; second, employment of cappers or steerers.

"15. Directing that the officers of the Court wherein fines for violations of the Medical Practice Act are imposed shall forward the amount of such fine directly to the State Treasurer to be placed to the credit of the Board of Medical Examiners contingent fund.

"16. Directing the answering, under oath, within ten days after demand by the Board, the name of the person or persons associated with or employed by the individual to whom the notice is directed."

PASSED AND FAILED; CALIFORNIA SCHOOLS.

The office of the board of examiners has compiled a list of those graduated by California schools and examined for license by the board for the six years from 1908 to 1913 inclusive. The list will be found on another page of this issue of the JOURNAL and is published for the reason that it is quite interesting and may be useful for reference in the future. Sometimes it is very useful to have such information published. For example, it is not generally known, but it is none the less true, that only through the lists of names of those licensed by the board from 1901 to 1906, which were printed in the JOURNAL, could the record of licentiates be restored after the official records were destroyed in the fire. It is also true that the State Board of Control could never have accurately checked up the Board of Examiners' office except by consulting the records in the office of the State Society. But the Board of Control has never seemed to be sufficiently grateful, somehow!

PRESENT DAY KNOWLEDGE.

The whole range of medical activity is so great and specialization both in research and in practice has so extended the general store of knowledge that very few of us can say with any degree of certainty what is the present day status of those things in medicine which do not come within our own limited range of work and interest. There are many cancer commissions and research laboratories; what is the word to-day on that subject? What is the trend of thought as to the causation of cancer? Has there been any material advance lately in the treatment of epilepsy, or measles or scarlet fever? It has been suggested that these are subjects which would be of interest to all of us, if a summary of to-day's knowledge, put authoritatively and concisely, could be placed before us. The JOURNAL is planning to do this and to pub-

lish from month to month short articles on various phases of medicine, giving the present day status of each particular thing. We will be delighted to receive suggestions. What are the topics which would most interest you? What is there that you would especially like to know about? It is immaterial whether there has been progress or not, so that the truth about things to-day be known. Send in your suggestions or comments and we will be glad to take them up for consideration.

"TWILIGHT SLEEP."

Progress, or if you will, change, is brought about in various ways. It has been quite interesting to see the result of feminine agitation upon scientific medicine. The use of certain drugs for the purpose of obtunding pain or removing memory during confinement has been a matter of scientific investigation for a number of years; the development of this adjunct to obstetrics is still in a formative stage; still, as we might say, in the laboratory. But some lay women writers got hold of the tag end of the laboratory work and lay publications uttered glowing words of unqualified commendation and insisted that no longer should woman suffer the pains of childbirth. Thereupon followed a quiet but none the less very big revolution in the country of the obstetrician. Every woman with child insists that she shall have that child without pain. Radical and conservative alike are confronted by the same problem; the same demand. The physician who would be cautious and wait a few years to see how many babies are injuriously affected, is in the same fix with the ultra radical obstetrician who would try everything new as soon as he hears of it—he must perforce do something to blot out the pains of childbirth. Feminine insistence has forced the hand of scientific research. But something good may come out of it. It is interesting to watch.

APPENDICITIS AND THE LAW.

A number of states have considered in their respective legislatures, proposed bills which would make it more or less of an offense for a surgeon to operate for appendicitis and not produce from the abdomen of the patient, an obviously diseased appendix. Fortunately for the general average of common sense, none of these bills has passed or received markedly serious consideration. It is the duty of every one of us to aid in the education of the general public on these matters, and we can only do that work by thoroughly understanding the facts and by careful, persistent and patient discussion of them with those laymen with whom we come in contact. Consider well the following simple facts: Four cases came within observation in a single week. All had about the same trivial (?) symptoms. Some nausea and vomiting at night. A feeling of indigestion or "gas in the stomach" the next day. Little or no actual pain. No increase in the pulse and no rise in temperature. No marked muscular rigidity but a well defined tender point in the region of the

appendix. In two patients, after twenty-four hours, a slight rise in temperature. Consultations were held in all four cases and in each it was unanimously agreed that an immediate operation was imperative. After this decision was reached no time was wasted in taking a leukocyte count save in one case, and in that one it was not especially suggestive. All were operated upon as acute appendicitis cases. In three the appendix was found to be perfectly normal so far as macro- or microscopic examination could determine. But the fourth; the one with symptoms not so marked as in one or two of the others? Quite a different story. Here was an appendix, buried deep down and completely gangrenous; so much so that the greatest of surgical skill was required to get it out even in fragments and not to soil the abdominal cavity. Which was the better course to follow, to operate upon all and have them all alive and well, or to delay with the consequent death of twenty-five per cent. of the number? Even the three who possessed normal appendices are benefited, for the operation may be regarded as a prophylactic one; they need never fear the dreaded appendicitis; it will never bother them. See what a very grave danger to the public welfare any penalizing law on this subject would be. Surgeons would hesitate to operate in cases where the symptoms were no more marked than in these four—and one of the four would probably have died if another twenty-four or forty-eight hours had been allowed to pass with fecal matter and suppuration working away from the bottom of the abdominal cavity. We have allowed the layman too long to joke about mistakes in diagnosis and the removal of healthy appendices. If he had one of these cases he would cease to think it a joke.

POLITICS AND HEALTH-OFFICER.

Down in Fresno, in April, the Health Board sort of got itself into a place where medicine should not be—in practical politics. Politics, the science of government, is a thing that every citizen should interest himself in; but things of medicine and public health should be removed from the "practical" part of politics and be wedded only to the scientific end of government. Dr. L. R. Wilson had been city health officer for some time and was endorsed by the county medical society with remarkable unanimity. The newly appointed health officer, Dr. Sweeney, may be and doubtless is a good man and an excellent physician; there is no reflection upon him. But it is not right that health matters should be the football of politics, nor does it look particularly well for a member of a board of health to propose and vote for his wife to occupy the position of bacteriologist under the board. One might indeed be excused if he should say that this was carrying the patronage pie a little too far and a little too crudely. Even Johnson would hardly do that. Dr. Wilson has been the very able secretary of his society for some years and we are sorry that a political agitation has displaced him as city health officer, which position he filled ably and well.

HARRISON NARCOTIC LAW.

Many letters are still being received asking what a physician may or may not do under the Harrison law. As a matter of fact, the law has in no way invaded the rights of the physician; it has only said that he must not be sloppy about his records, and this is a good thing. Too many physicians are too careless about keeping records of anything relating to their work, and this the JOURNAL has deplored on more than one occasion. You can prescribe any narcotic you think necessary, but you must have registered with the collector of internal revenue and obtained a license; and you must put the date, patient's name and your own name in full, on the prescription, together with your license number. It has been ruled that by "name in full" is meant the signature which you ordinarily use to sign legal documents, checks, etc. If you wish to buy narcotic preparations covered by the law to dispense or to use in your practice, you must obtain them on an official blank which the collector sells for one dollar a hundred. If you give away or dispense any of such preparations, you must keep a record of the date and amount and the name of the patient and preserve this for two years. All of which seems to work no hardship upon the physician and indeed is a help, for he now has the assurance that his prescriptions will not be refilled. Elsewhere we publish an abstract of the rulings of the Commissioner on various points of the law. Undoubtedly many of these rulings will be more or less modified as time goes by and it is found how they work. In the main, they seem to be not unjust or too stringent and it will not be long before we all get the habit of following them. They will do us no harm whatever.

INDUSTRIAL SICKNESS INSURANCE.

The JOURNAL pointed out some time ago that, in all probability, a law would be passed in this state, before very long, extending compulsory insurance to disease on very much the same lines as it now applies to industrial accidents. That movement has already begun in the passage of an amendment to the present industrial accident law making it include industrial diseases as well as accidents. How these diseases shall be catalogued—what shall be and what shall not be considered an industrial disease—is, of course, a matter for future study and adjustment by the commission. As a sociologic problem, the whole question of whether or not such industrial legislation is in the main good or bad, is too large to discuss. In the past, judging from a few centuries of development, it would seem that all sumptuary laws tend not to the betterment of the race; nature seems to work things out better, if you give her enough centuries to do it in, if left alone. But then it may be maintained that man's modification or control of the development of man is merely an expression of the working out of nature as found in the mental development of the genus homo. Be that as it may, the present trend is toward radical changes and big, new movements; one of these is the attempt to regulate pauperism and poverty and the

burdens that accompany, by such laws as the industrial accident law, the workmen's compensation phase of it, the pension of widowed mothers, and the like. A logical extension of this movement or stress, if you please, is the sickness insurance, compulsory within certain incomes, and this we may confidently expect to see before many years have gone by, or else all signs fail. We might as well be ready for it.

MEDICAL MILK COMMISSIONS.

The American Association of Medical Milk Commissions will hold its annual meeting this year in San Francisco, June 17th and in Berkeley June 18th; on June 19th the Commissions will meet on Mt. Tamalpais. There will be a large number of the most prominent enthusiasts for pure milk the country over, in attendance, and it is expected that this will be one of the most satisfactory meetings the Association has ever held. Dr. T. C. McCleave, of Berkeley, California, is President of the Association.

SENATORIAL SENSE.

Elsewhere in this number of the JOURNAL we publish a transcript of some of the remarks of Senator Benson in discussing one of the medical bills before the lately demised and not lamented legislature. Doubtless many of the solons who stand in support of poor and lower medical laws are as well acquainted with the facts as Senator Benson, but they play the game of votes and peanut politics; talk large on things about which they know better, and so conceal the real issue. At any rate, it is a pleasure to see a man have the courage of his convictions and a willingness to come forward and tell straight out what he knows and knows to be the truth. We desire to extend our thanks and the thanks of the Society to Senator Benson, and all the other members of the legislature who stood for sound medical legislation.

THE DETAIL MAN—AN ECONOMIC WASTE.

"The Passing of the Detail Man," which appeared in the advertiser's column of the CALIFORNIA STATE JOURNAL OF MEDICINE, March 1915, deals with but one phase of the situation—the physician's viewpoint. The criticisms offered naturally have come from the manufacturer and his agent. The manufacturer and his agent, however, must soon awaken to the fact that the conditions which made the detail man a profitable propagandist are now radically changed. The advancement of educational standards; the continual exposure of proprietary and medical frauds; keen competition, and the general disposition to discredit commercial exponents of therapeutic virtues, all tend to make the detail man's life a burden. This is particularly the case in our large cities.

In order to gain an audience the detail man must have some excuse for calling. He cannot with propriety assume to take up the physician's time without something compensatory in his visit. The manufacturer is well aware of this and he is constantly devising "something new" to aid the

detail man in his rounds. The offering of samples has lost its advertising value. The busy practitioner no longer bothers with these, nor does he pass them on to his patient. He knows that this little trick encourages self-medication and builds business for the proprietary interests. The leaving of "literature" is also becoming obsolete—this is accomplished at less expense by medium of the mails. The "friendship" dodge of taking the doctor out to dinner or to the races is rather too costly for universal adoption. Getting "solid" with the doctor's office nurse has been worked with success but it takes ingenuity and time to warm up "the cold shoulder."

About the only worth-while thing that counts these days is the man of exceptional quality who is—first of all—a gentleman; who is backed by a house of unquestioned integrity; who knows his line from alpha to omega. Such a man, however, is a luxury for the manufacturer to maintain in the field. He cannot possibly pay as a yielder of direct returns.

In the larger centers the physician can be seen but a few hours during the afternoon. At best the detail man can make but two or three worth-while interviews. He may make five or six "pseudo" interviews, or maybe a dozen "fake" interviews. Pseudo interviews and fake interviews, however, belong only to the cheap man who is capper for a cheap house. It is this mendicant class that leaves samples and trash in your reception room and who slinks away and reports you as "visited."

The worth-while detail man can make only a very few calls per day and he costs his house anywhere from ten to fifteen dollars per day. Now, what can this worth-while interview consist of? It consists in the majority of cases, of just a good-fellowship exchange of courtesies. Frequently there is no mention whatever of business. The whole procedure is to *promote cordial relations* between "the house" and its good friend—the physician. This, in truth, is the legitimate field of the detail man. It typifies the detail man of the future if not of the present. The sooner the manufacturer finds this out the better it will be for all concerned.

AMERICAN MEDICAL ASSOCIATION

Meets

in San Francisco

June 22, 23, 24, 25, 1915

ORIGINAL ARTICLES

MORPHINE-SCOPOLAMINE ANESTHESIA IN OBSTETRICS.*

By LOUIS I. BREITSTEIN, B. S., M. D., San Francisco.
Instructor of Obstetrics in University California
Medical School.

I have been requested to prepare a paper on this subject by several members of the Society who are aware of the fact that I am working with these drugs, employing the technic advocated by Gauss and Kronig of Freiburg. At the present time I am not in a position to advance any fast and fixed conclusions as my cases are all too few, numbering but fourteen, but I have received enough encouragement to impel me to continue the work, and I shall reserve a final judgment until I can quote from results in one hundred cases.

THE IMPORTANCE OF THE SUBJECT.

Anesthesia in obstetrics is in itself quite a problem for the reason that we must consider its effects both on the mother and the child. We all recognize the need for some form of narcosis. New departures in other branches of medicine and surgery are fast becoming familiar to the public. The propaganda for education of the laity is now busying itself with obstetrics so that pressure is being brought to bear on the obstetrician at the present time, the great demand being for relief from the fears and agonies of childbirth. The obstetrician recognizes only too truly the fact that the woman of to-day who lives the modern life is experiencing more difficulty in bringing her young into the world. Not only does she suffer more intensely from nervous exhaustion, due to the fears and pains of childbirth, but as the result of this exhaustion she requires aid in the way of operative measures, especially forceps.

Chloroform, ether, or nitrous oxide cannot be given over any length of time and the question before us this evening is,—Can small non-poisonous doses of morphine-scopolamine be administered to the parturient woman over an extended period of time so as to allay her fears and relieve her suffering and exhaustion without doing appreciable harm to mother or child?

PREPARATIONS EMPLOYED.

But first a word as to the preparations employed. Morphine and its hypodermic use is familiar to all. Scopolamine, as I use it, is put up by the Hoffman-La Roche Chemical Works according to the method prescribed by Straub, and is designated as "Scopolamine Haltbar." The superiority of this preparation lies in the fact that it is a stable solution and carefully standardized. Narcophin is a proprietary preparation of narcotine,—morphine meconate,—and according to Kronig gives better results and is less toxic. It can be obtained in ampules ready for hypodermic use.

HISTORICAL SKETCH.

The employment of these drugs in obstetrics is nothing new. Von Steinbuckle in 1902 first recommended their use in obstetrics; he published the results in twenty of his cases. His caution in

*Read before the San Francisco County Medical Society, November 17, 1914.

the use of scopolamine in childbirth contrasts very favorably with the boldness with which it was used in surgery. Gauss in 1906 published his results in over six hundred cases. Credit is given him for developing the technic of "Dammer Schlaf," or "Twilight Sleep." Kronig in 1907-1908 elaborated and perfected the details and published his results in 1,500 cases. During all this time the controversy among obstetricians waxed warm. Zweifel, Beirute, and Newell reported favorably and recommended the treatment; Stefens and Hocheisen opposed its use, basing their views on results in three hundred cases. Leopold and Veit gave it up as dangerous. Hatcher in 1910 published his classical article reviewing the entire question, both as to its surgical and its obstetrical uses, paying particular attention to the pharmacology of the drugs. He cited the advantages and the disadvantages in the use of morphine-scopolamine as follows:

Advantages:—1. Memory of the event is lost. 2. Pain is decreased or abolished. 3. Hemorrhage is lessened.

Disadvantages:—1. Danger to the child, by producing asphyxia; in some cases, death. 2. Miscellaneous minor disadvantages, a. Labor is prolonged. b. Unsuitable for general practice. c. Patient needs watching and attention while under the treatment.

The impression I received from reviewing this article was that the drugs are too dangerous to be used and the results too difficult to attain on account of the complex technic with its minute details. The entire matter, therefore, was dropped until revived again by Kronig in November, 1913, at Chicago; his article was published in *Surgery, Gynecology, and Obstetrics*, for May, 1914.

It was at the beginning of August of this year that I began using this treatment experimentally. In spite of the above review of the literature I tried to approach the question with an unbiased and impartial mind. I wished to ascertain for myself whether there was any merit in what Kronig was advocating. I obtained the technic from Freiburg, sent for the solutions, and in a few weeks had several cases which afforded me the desired opportunity. Every effort was made to avoid the errors which are responsible for many of the bad results reported. These errors are as follows:

1. Most men in this country used a combination of the two drugs, morphine and scopolamine, not only for the initial dose but for the succeeding doses also.

2. Bad results were further due to excessive dosage and to the use of unstable and deteriorated preparations of the scopolamine.

3. The erroneous notion prevailed that the method aimed to abolish the suffering of labor, whereas it is intended only to prevent memory of the event.

I soon learned that the relief which the mother experiences is similar to that achieved by anocia association, or by narcosis in general surgical operations, and I employed the two factors so essential to success.

THE ESSENTIALS FOR SUCCESS.

1. Emotional and psychic disturbances prior to operation must be reduced to a minimum.

2. Pain and fright must be altogether absent at the time of operation, by the administration of a suitable anesthetic.

THE ADMINISTRATION OF THE TREATMENT.

With these essentials in mind, my technic begins in the ante-partum stage for then I allay the fears and build up the confidence of my patient, so that when labor actually begins her co-operation is already secured. During the first stage the room should present a cheerful appearance and be free from any association with the actual delivery by the absence of instruments, odorous solutions, and so on. Sensory disturbances in the way of noises, strong lights, etc., must also be positively eliminated.

With the onset of pains the diagnosis of labor is accurately established; the contractions of the uterus being determined by laying the hand on the fundus. The first injection consists of 0.03 gm. of narcophine combined with 0.00045 gm. of scopolamine. Three-quarters of an hour after the first a second injection consisting of 0.00045 gm. of scopolamine alone is given. Further dosage varies for each patient and depends entirely on the memory test. The minimum amount of scopolamine is used that will secure amnesia, or abolition of memory. This is very important, and Gauss insists that the success of the treatment stands or falls by the observance of this one test.

The average normal case requires from five to seven injections, and while in some cases it may only be necessary to give three, in others as many as twelve or fourteen may be needed. A complete record is kept and I have a regular chart on which is recorded the findings for each individual case. My nurse, whom I have specially trained for this treatment, attends to the chart work. A copy of this chart is appended.

MANAGEMENT OF LABOR.

The cases are conducted exactly the same as if no morphine-scopolamine had been administered. The examinations are made per rectum in order to avoid moving the patient into the delivery room where she would have to be cleansed with the solutions. A simple gauze sponge saturated with bichloride solution keeps the field clean.

COURSE OF LABOR.

The patient is drowsy and sleeps between her pains. When a pain occurs she feels it to some extent and will moan and often toss about, but rarely has to be restrained. Though semi-conscious she will in some cases respond to questions, somewhat tardily, will obey commands as to changing her position or when it comes time to bear down. The progress of labor must be carefully watched; the characteristic cry is absent which denotes descent or when the head strikes the pelvic floor. Any straining efforts as the head distends the vulva are controlled by a few whiffs of ether; this will also prevent the patient from awakening, for at this time the pain is more acute. The head

gradually escapes over the perineum, permitting more distention of the tissues.

As soon as the child is born the cord is quickly severed and the baby removed to another room. The Mother's face is kept covered, her ears are occluded so that in case she awakens she will neither see what is going on nor hear the cry of her child. She is made comfortable and usually her deep slumber continues. After a variable time she awakens with no remembrance of the labor or that she has already given birth to her child.

THE PUERPERIUM.

None of my patients developed any abnormality during the puerperium. They were encouraged to move about in bed, to turn frequently from side to side, and to avoid lying flat on the back; as a rule they were permitted to sit up in bed rather early. They were given massage and resistance exercises by the nurse. All this increased their general tone and when they got up they were free from the usual weakness that accompanies the first attempts to leave their bed. The lying-in period is not cut short and they remained in bed the usual ten days.

THE EFFECT ON THE MOTHER.

Eight of my cases were primiparæ and all of the entire fourteen were in good physical condition. Nine were entirely successful, three partially successful, and two were failures. Or, in round numbers, the results may be classified as 14 per cent. unsuccessful, 21 per cent. partially successful, and 64 per cent. successful. Kronig claims complete amnesia covering the duration of labor in 80 per cent. of his cases, and Harrar of the New York Lying-in Hospital secured complete amnesia in 66 per cent., partial amnesia and hazy recollection with distinct alleviation of suffering in 10 per cent., with 20 per cent. not responding at all to the drug. Rongy of New York obtained the following results: 83.2 per cent. in which there was complete amnesia with analgesia; 7.2 per cent. in which there was analgesia without amnesia, and 9.6 per cent. in which the treatment failed to produce the effects desired. Of my two failures, one was due to the fact that the treatment was not begun until the end of the first stage of labor and I did not have sufficient time to put the patient completely under. In the other the patient was highly neurotic and the drugs, instead of acting as a sedative, and producing sleep, only excited the patient and caused delirium, necessitating the abandonment of the treatment.

THE EFFECT ON THE CHILD.

There were no fetal deaths. Seven of the babies cried spontaneously at birth. Three were drowsy; they were kept warm and no artificial method of resuscitation was employed. Within five or ten minutes they were breathing normally and the heart action was good. Two were asphyxiated. One case was resuscitated within five minutes; the other required artificial respiration and continuous action on my part for fifteen minutes before I was satisfied that all was well. The history of the labor in this case is interesting. The patient was a primipara; the diag-

nosis at the outset of labor was R. O. P. with early rupture of the membranes. The pains were at first irregular and weak, but later of a nagging character. The patient did not dilate properly until after she had been in labor for twelve hours, when her pains were coming every six or seven minutes, lasting half a minute. She was then given her first injection. All in all she was under the influence of the drugs for fourteen hours, receiving ten injections. After waiting three hours in the second stage of labor with no advancing head, mid high forceps were applied, and the Scanzoni technic, under ether anesthesia, was used to deliver the child. Whether the forceps, the ether, the prolonged labor, or the use of the morphine-scopolamine, was responsible for the asphyxia it is impossible for me to state.

THE DURATION OF THE LABOR.

The average time for the primiparæ was eighteen hours, computed from the patient's statement as to when she first experienced pains. This is rather a crude method, but the best we have at present. The average length of time while under the influence of the drugs was ten hours; during this period seven or eight injections would be given. The average time of labor for the multiparæ was fourteen hours, with seven hours under the influence of the treatment, and receiving five or six injections.

There were three forceps cases. One a mid-high forceps application and two of low forceps, the indication for the use of instruments being the head on the perineum for twenty minutes with no advance. Harrar and Rongy have remarked the tendency for the presenting part to

Morphine-Scopolamine Chart.*

Hospital.....	Case No.....
Name.....	Date.....
Hour.....	
Drug, amount, maker,	
Dilatation of cervix, vaginal, rectal,	
Membranes,	
Uterine contractions, frequency, length, strength, onset 2d stage, pains	
Subjective symptoms, fatigue, thirst, nausea, pain, sacral, abdominal, perineal,	
Objective symptoms, sleep between pains, during pains, flushing, vomiting, twitching of hands, outcry, mental confusion, delirium,	
Memory of objects, retained, lost,	
Foetal heart,	
Maternal pulse, respiration, temperature,	
Delivery method, anesthetic.....	
Condition of baby at birth.....	
Perineum.....	
Hemorrhage.....	

* As devised by Harrar and McPherson and used in New York Lying-in Hospital, N. Y.

fail to advance when it reaches the outlet. In the future pituitrin will be given in order to avoid the use of forceps.

I have not cited my results for the purpose of drawing conclusions, but with the hope that I may precipitate discussion. Those who advocate or who condemn this treatment should base their decisions on actual experience. Opinions or statistics gathered from the various parts of the world, from men whose reputations we can vouch for and whose experiences are not limited to a few cases, can throw much light on this question. From my own results I feel justified in continuing to administer this treatment to any of my patients who are in good physical condition and who will co-operate with me.

Discussion.

W. F. B. Wakefield: Mr. Chairman, ladies and gentlemen: Being a very poor speaker and being very much interested in this subject, I have taken the liberty of writing out my discussion. This has been made possible by Dr. Breitstein's courtesy in sending me a copy of his paper.

I think Dr. Breitstein has brought before this society one of the most important subjects that has ever been discussed here and I congratulate him on the masterly way he has introduced the subject.

I have been practicing the scopolamine treatment of labor with very great care and very great scientific interest. I have used it now in twenty-eight cases. Like Dr. Breitstein, I have a hesitancy, in view of the great amount of professional prejudice that seems to exist against the treatment, in discussing the subject without a greater wealth of material. I feel, however, that what I can do in twenty-eight cases, I can do in a hundred or any other number. In these cases I have not had a single failure. In some of them the results have been relatively more perfect than in others, but in all of them the results have been perfectly satisfactory, both to me and to the patient. Seventy-five to eighty per cent. of them have carried away from their labor no recollection of any kind; the other 20 to 25 per cent. have carried away some dim recollection of one kind or another, but no recollection of pain.

I think this treatment should be called the "scopolamine treatment" and not the "morphine-scopolamine treatment." There seems to be a very large number of doctors, unfamiliar with the Freiburg technic, who imagine that the treatment I am employing and that Dr. Breitstein is employing is identical with the treatment which we all tried twelve years ago when using an old proprietary tablet. The seminarcois, produced at the beginning of and carried out through the entire labor, is a pure scopolamine narcosis and does not depend, in any way, on morphine for its production. Owing, however, to the fact that it is not until after the second dose of scopolamine that the patient passes into this semi-conscious condition, it is expedient to give a small dose of morphine or narcotine with the first dose of scopolamine in order to control the severity of the pains for an hour. Personally, I have always used 1/6 of a grain of morphine and have had no experience with the narcotine. Also I have used entirely in my work fresh solutions of scopolamine made from the crystalline drug instead of the scopolamine haltbar preparation used by Dr. Breitstein. In the light of my experience to date, I would no more consider conducting a labor without the aid of scopolamine than I would consider performing a surgical operation without the aid of an anesthetic.

The type of women with whom my practice brings me in contact are very badly fitted both by education and environments to stand the physical sufferings of labor. I frankly admit that to carry a highstrung, nervous woman through a long labor and have her emerge from it with no recollections is a difficult feat to accomplish. All in all, I have found this treatment one of the most difficult things to put through successfully that I have ever tried. It is easy enough to get the patient into this condition of seminarcois but to hold her there hour after hour, in the face of the ever increasing severity of the pains, is no easy matter and requires a great amount of good judgment and experience. One must be able to appreciate with unerring accuracy the exact time at which the brain is soon going to apperceive unless headed off by a fresh dose of scopolamine. Here is where Kronig and Gauss employ their memory tests, which I consider very detrimental to the success of the treatment. These men are constantly waking their patients up to find out if they are satisfactorily asleep. By their interrogations, they are constantly urging the brain to apperceive when the whole success of the treatment depends on keeping it from so doing. My assistants and I have found out that the less we address these patients the most successful is the outcome of our treatment. Beyond asking a patient to change her position or something of that kind, we make it a rule never to speak to the patients at all. Sometimes patients are inclined to be garrulous under this treatment and will ask questions and at first we used to answer them, now we never do. For instance, I had one patient recently under treatment and the membranes ruptured with an unusually explosive gush of water. The patient momentarily perceived the happening and inquired about it. I foolishly told her that the membranes had just ruptured. Afterwards she said that the only thing she remembered was when the membranes ruptured. Had I not called this fact distinctly to her brain by replying to her question she would have had no recollection of it at all. Those experienced in the use of scopolamine will soon learn from the patient's expression, the things she says, the things she does, to appreciate the time at which it is expedient to give another dose. When the head can be seen at the perineum, I add to my scopolamine a few whiffs of chloroform with each pain. I think that, if the scopolamine has taken care of the labor from the beginning of the first stage to the time when the head is distending the vulva, it has done all that ought to be expected of it.

I have personally watched very carefully the effect of the scopolamine on both mother and child and I am thoroughly convinced that, beyond producing this state of amnesia in the mother, it has no effect on either. If scopolamine increases at all the duration of labor, it does so to only a very slight degree. I have not been able to satisfy myself that it does so at all, unless the patient is overdosed. The pains continue just as regularly and efficiently under scopolamine as without it so far as I can see. In primipara, after several hours of labor, with the cervix dilated, the head on the deep muscles, I sometimes find that the uterine contractions are inefficient to produce satisfactory dilatation of the outlet. I had this same trouble in, I think, quite as large a percentage of cases before I used scopolamine. In these cases a dose of pituitrin overcomes the difficulty.

Referring to the two failures that Dr. Breitstein claims. In the first case, I should not have used the scopolamine at all but would have contented myself with the intermittent use of chloroform. Scopolamine is essentially intended to take care of the first stage of labor and, I think, has no application in cases such as Dr. Breitstein's first case.

I do not think that there is any more asphyxia-

tion of the children under this treatment than under any other and I do not believe that the asphyxiation has anything, whatever, to do with the use of scopolamine for I have time and time again carried a patient through an eighteen or twenty-hour labor and had the child cry lustily the moment it was born. All of us have a certain percentage of cases where the children do not cry immediately at birth and where we have to slap them or splash a little cold water on them or do something to start respiratory function and I do not think that I have any larger percentage of these cases under scopolamine treatment than I had before.

Since I have been using the scopolamine treatment in my obstetrical work, I have lost two babies. I am especially sorry for this fact because very likely those who are disposed to criticize will use this fact as an argument against the use of scopolamine. As a matter of fact, I am quite sure that these two babies would have been stillborn under any circumstances. In the one case, the mother had been a chronic invalid for years and was scarcely able to walk a city block at the time she went into labor. The child was undeveloped and had a very feeble heart action and I sent for the woman's husband a week before labor set in and told him that I thought it extremely unlikely that the child had enough vitality to withstand the ordinary strain of labor for such had been my experience in similar cases in the past.

In the other case, I noted that, while the child's heart had remained perfectly strong and regular up to the time of full dilatation of the cervix, as soon as the head commenced to advance, the child's heart became very feeble. Realizing that some unusual condition was present, I applied forceps and effected a hasty delivery. When the head was born it was seen that I had to deal with an unusually short cord twisted around the child's neck; the cord had to be cut before delivery of the body could be effected. I think in this case as soon as the head commenced its forward advance sufficient traction was made on the cord to shut off the circulation.

To me the most remarkable thing that I have noticed in connection with this treatment is the absolute absence of nerve exhaustion following labor. Unlike Dr. Breistein, I have been getting my patients up early. Unless there is some special reason to the contrary, such as deep injury to the structures of the pelvic floor, my patients all sit up the day following the birth of the child. They feel like doing so, and I let them. The second morning most of them walk into the bathroom, are given a tub bath and return to bed feeling very much refreshed. From this time on they progress just as fast as their own feelings prompt them to do, all of them being cautioned not to do anything that tires them. Most of the patients go home from the hospital at the end of a week feeling just as strong and muscularly capable as they did at the end of three or four weeks under the old regime. Furthermore, I have carefully examined all these women three or four weeks after labor, as I have always made a habit of doing in my obstetrical work, and I find that this early rising does not in any way interfere with satisfactory involution of both the uterus and the muscular structures generally; in fact, the general pelvic condition is better four weeks after labor when they get up early than when they do not.

Williams has stated, and my experience confirms this statement, that from 25 to 35 per cent. of the cases that he examines four or five weeks after labor have a retroverted uterus. This occurs much less frequently in the patient who gets up early and has occurred only twice, I think, in my twenty-eight cases. Patients lying in bed are on their backs nine-tenths of the time and if the uterus involutes quicker than its ligaments, as soon as it has contracted sufficiently to clear the promontory

of the sacrum, lying in bed favors its backward displacement. When no reason exists to the contrary and women are spared the nerve exhaustion that follows labor under ordinary conditions, there is nothing gained by keeping them in bed. Quite the contrary.

Anyone trying this treatment will very soon discover that it can only be successfully applied under very ideal conditions. In the first place, the treatment should be carried out in a delivery room so situated that the patient can be protected from light, noise or confusion of any kind because any confusion in or about the delivery room will so seriously disturb the effect of this treatment as to very materially interfere with its efficiency. Furthermore, there should be constantly in attendance on the semi-conscious patient one or two nurses who thoroughly understand the technic of this treatment and who are entirely in sympathy with it and no one else except the supervising accoucheur should go in or out of the room. Loud talking or noise of any kind should also be interdicted within hearing distance of the room if one wishes to make this treatment entirely successful. The man on whom the responsibility of this treatment rests should be within calling distance during the entire time that his patient is in labor. It can readily be seen from this statement of facts that it is not a treatment which will lend itself to general use. Only those, I think, will be able to satisfactorily use this treatment who are willing to make the necessary sacrifice of time and surround themselves by the conditions that are essential for its success.

Dr. B. F. Sandow: I should like to make a few remarks in regard to the scopolamine narcophine treatment for the alleviation of pain in childbirth, based upon personal observations at Freiburg and Munich.

The treatment is given to every patient applying for admission to the maternity, private patients having separate rooms, while indigents and others paying little are confined in wards containing several beds.

The treatment set forth by Dr. Breistein is in the main identical with that followed at Freiburg and Munich. The initial dose of Straub's mannitol-scopolamin is $1\frac{1}{2}$ c.c.m. (0.00045 scopolamin) combined with 1 c.c.m. (0.03) of narcophine, followed in three-quarters of an hour by $1\frac{1}{2}$ c.c.m. of scopolamine only; three-quarters of an hour after this second dose another combined dose of scopolamine and narcophine is given, but of diminished dosage. Thereafter these smaller doses are repeated at intervals of one and one-half hours, every third dose of scopolamine being combined with narcophine.

On an average four to five injections are ample to see the patient through, but often more doses are required to produce the desired amnesia.

As a basis for the beginning of the treatment, two points are observed: regularity of labor pains and a beginning dilatation of the os.

Four to five cases, on an average, are treated daily at Freiburg, while at Munich as many as ten daily are received. A routine treatment has been established for all cases and the injections are made by a competent head nurse, the physician in charge being called only when untoward symptoms occur and when the baby is about to be born. This will prove to you that the dangers incident to the treatment are considered negligible.

My conclusions, based upon the observation and attendance upon 90 cases in Freiburg and Munich, are: That the danger to the mothers is nil. That the babies are frequently born in an oligopneic condition, presenting a bluish appearance; that this subsides within five or ten minutes in most cases, leaving the baby in perfectly normal condition. That there is apnea in some cases necessitating efforts at resuscitation. That the total mortality from all causes is 3 per cent.

In regard to the environment of the lying-in, ef-

forts are made for absolute quiet in private wards, while in the general wards (where often four or five are simultaneously in labor) the maintenance of quiet is often difficult—and yet, even in these latter cases the results have been quite satisfactory.

Women from all parts of the world appear in Freiburg for the treatment, and quite a few I noted to be from the eastern part of the United States.

To conclude, I was profoundly impressed with what I saw in Freiburg and Munich, and I believe that the treatment, properly carried out, is a boon to parturient women.

Dr. W. E. Libby: In the University Hospital we have had experience with 20 cases. Of the 20, 10 have been primiparae and 10 multiparae. Our technic is that followed at Freiburg, and while I do not want to draw any conclusions, I should like to give you a few impressions received from these 20 cases.

Of these cases, 16 have been successful as far as the mother is concerned. Two were unsuccessful, although one of the cases received 12 doses, and two others were only partially successful.

From this series of cases I will make three observations: First, the effect upon the mother, where the anesthesia has worked has been a complete success. She knew nothing that happened after the second injection; and, even though we have made several examinations and have moved the patient from one room to another, she has known nothing about the labor. The baby is not removed from the room and we do whatever repair is necessary without anesthesia.

Second, the effect upon the child: here I have to disagree with Dr. Wakefield. We have had only one death, and autopsy showed that it was due to a congenital heart lesion. In one case I worked about one-half hour with the child before it was all right, and now, in every case when I see the head coming, I have hot and cold water prepared in case resuscitation of the child is necessary. This asphyxiation is, however, only temporary and in from 10 to 15 minutes the child is in a normal condition.

Third, the effect upon labor: I am satisfied, just from these few cases, that the labor is prolonged, that the pains are in some cases irregular and infrequent. The first stage is slow and in the second stage the pains do not seem as strong, and I think in the long run this will necessitate more frequent instrumental deliveries. In several of these cases the mother has been excited, and though I told her to push and bear down she would not do it. She would become more irritable and excitable and thrash about in bed. In these cases I have given pituitrin, but the patients would do no better.

From these few cases, I can say that as far as the mother is concerned, the anesthesia is without danger. As far as the baby is concerned, it may not be so free from danger; however, the fetal asphyxiation is only temporary. As far as the labor is concerned, it may be prolonged and instrumental delivery may be required more often.

A. Newman: I would like to ask Dr. Breitstein and Dr. Wakefield whether they have noticed any effect on the secretion of milk afterwards?

L. I. Breitstein, closing discussion: I want to say that morphin-scopolamin is like any other anesthetic in this respect—that is, it is not fool-proof. You have to watch it, and the safety with which it is administered depends upon the one who administers it. If you have an especially trained anesthetist, the results are better.

About waking the patient up to give her a sleeping potion, that is not exactly the thing we do. If the patient is asleep she is not disturbed, but if she awakens or comes out of her semi-unconscious condition, that is the time we interrogate her. I

believe this memory test is the test we should adhere to. If you give too much narcotic you bring about muscular relaxation, and that is apt to prove dangerous because it produces atonic hemorrhage. If you give too little she will remember, and the treatment is for naught. You have to get between the two, and that you can only do, I believe, by the memory test.

As to contra-indications, the patient should be examined from four to six weeks before she goes into labor and measurements made. If there is any disproportion between the size of the mother's pelvis and the size of the baby's head, this treatment is not suited for this particular case. Again, it should not be instituted when labor is far advanced, as in the second stage.

About keeping the patients in bed or getting them up early, I am inclined to be a little conservative. I do not get my patients up early. I prefer to keep them in bed ten days.

As to the size of the dose of scopolamine used, Kronig in his paper, read at the meeting in Chicago, November, 1913, said that after working on five thousand cases he has formed a schedule which he uses for the general run of women in good physical condition. That is the schedule I follow. In the first two injections, the dose of scopolamine is 0.00045 gm. or 1/150 gr. The dose of the third injection and those used subsequently consists of 0.00015 gm. or 1/450 gr. scopolamine. If Dr. Wakefield would total up the amount of scopolamine used, he would find that I employ the same amount if not less scopolamine than he uses.

In reply to Dr. Newman's question, I will say that scopolamine has a tendency to dry up secretions just like atropine. The breast secretion contains traces of scopolamine, and for that reason I do not put the babies to the breast for the first twelve hours. A breast pump is used. The milk supply is rarely diminished; however, I will state that the tendency to engorgement of the breasts generally seen about the third day is noticeably diminished.

A POSSIBLE EXPLANATION OF THE CONFLICTING REPORTS ON TWILIGHT SLEEP.*

By STELLA LEHR, M. D., Berkeley.

A number of physicians have expressed opposing views on the "twilight sleep." My observations in Freiburg and subsequent experience in New York have convinced me of the necessity of an explanation. My personal experience afforded me a satisfactory explanation, and I offer it to you for your consideration.

It is very simple. There are two methods of giving the twilight sleep—diametrically opposed in principle.

First: The original Gauss-Krönig method, having for its keynote individualization of dosage; the drugs administered in the smallest possible amount to meet the varying susceptibility of the patient; morphine and scopolamin being used; morphine given only with the first dose.

Second: The Siegel method, having for its keynote standardization; the drugs administered in stated doses at regular intervals disregarding the

* Read before the Alameda County Medical Association, January, 1915.

susceptibility of the patient; narcophine substituted for morphine, and repeated with every third dose.

The latter method is based upon the results of Gauss' experience in working out the first method; theoretically it does not appear very different, as the total amount of drugs and the average length of labor were taken into account in making out the methodically repeated dosage, which is the distinguishing feature of the Siegel method. Its practical application does not work out so well, as the report of my cases will show.

In Freiburg the original twilight sleep was given only in the first-class wards and therefore not available for clinical purposes. In the third and fourth class wards the Siegel method was used and this was what the visiting physician saw. The unfortunate circumstance was that the observer was not informed that she was witnessing a method on trial, and not an approved and accepted one, as so many physicians have concluded.

My experience was a case in point. I was in Freiburg five days before I realized that what I was seeing every day in the third and fourth wards did not represent the latest approved method. From my previous reading I had received the impression that the injections were given to meet the susceptibility of the patient and her reaction judged by the memory test and various reflexes.

The first day I visited the ward, there were three cases in progress, and while I observed all three I concentrated my attention upon one. The first dose was given when contractions were strong, regular, and five minutes apart, and in ten minutes the patient was asleep, waking only at the climax of the pain. I watched in vain for any test of the patient's condition and indications for further dosage. What I did observe was that the drugs were repeated methodically and soon the patient was snoring—in a very deep sleep. Upon inquiry I was told that as long as the patient could be aroused, there was no danger. Later on two injections of pituitrin were used, and at the final stage inhalations of ethyl chloride were given. The baby was pinkish lavender in color and did not breathe for about ten minutes. During that time various means of resuscitation were used: the baby was suspended by the feet, and body vigorously slapped, then laid on a table, and chest rhythmically pounded; then body immersed alternately in hot and cold water, and finally intratracheal catheterization used. After witnessing this I naturally concluded that the twilight sleep was to be used very conservatively or better still not at all.

After five days I learned through American mothers whom I met socially that this method was only an experiment and did not represent the original painstakingly worked out Gauss-Krönig method. During these first few days the results seen in five cases were not favorable and a number of American physicians had come and gone carrying with them this unfavorable impression. During the succeeding five days, four cases were seen in which the babies were in perfect condition and cried immediately after birth; in two other cases, respiration was only slightly delayed.

These varied results, suggested the necessity of individual dosage. It seemed unjust both to the original treatment and the visiting physicians to receive such misinformation. When, in an interview with Professor Krönig, I told him of my experience, and the fact that a number of physicians had come and gone uninformed of the truth, he was perturbed and said, "That should not be." He also said that the Siegel method was not an improvement on the original, but an attempt to overcome the necessity for the constant watchfulness which made the original method almost impracticable for the general practitioner. Siegel himself states in his report that it is an attempt to simplify the method but he does not recommend it in private practice. Dr. Krönig said they were entirely satisfied with the original method and considered it perfected. He also promised to remedy the condition with regard to visitors; that was only a few days before the war, which, of course, put an end to clinics.

I was amazed upon reaching New York to realize the extent of the misconception regarding the two methods. Out of seven hospitals using the twilight sleep, only two were using the correct Gauss-Krönig method. These were the Long Island College Hospital under Dr. Polak and the Gouverneur Hospital in New York under Dr. Knipe. Both of these men were in Freiburg this summer and met Dr. Krönig personally. The other five hospitals were using narcophine, and some followed the Siegel scheme; most have since adopted the original.

During a period of six weeks I observed the work of the Gouverneur Hospital and my disapproval and conservative attitude was entirely changed. The results were most satisfactory and I shall state my observations as concisely as possible. The Gauss-Krönig method was strictly adhered to. The patients were placed in a quiet darkened room, eyes bandaged and cotton in ears. The first injection was not given until it was certain that labor was in progress. Each patient seemed to have an individual reaction and close observation of the effect of the first dose gave a hint as to subsequent dosage.

The signs to be watched for, are flushing of the face, thirst, sleep (how soon apparent and how deep). If these signs are marked *soon* after the first dose it may be assumed that the patient is susceptible. The effect upon pain sensation is to diminish it, of course, but in addition to this all anticipation of pain is removed. The mother sleeps between the contractions, awakens only at the climax, and is asleep again almost before it is over. This effect gives the observer the impression of a lengthened interval between pains. True observation can only be made by keeping the hand upon the abdomen, where the contraction may be felt from the very beginning to the end. If the interval should really be lengthened, it is another sign of a susceptible patient. It is gauging this "specific susceptibility" that gives the cue for subsequent dosage, and constant observation is necessary to success. After the first dose has had effect, the memory test is applied and repeated at inter-

vals of forty-five minutes. Experience gives such familiarity that the memory test may be used infrequently, but it is indispensable to the beginner. It is best to make this test as inconspicuous as possible, and asking how many injections have been given is usually sufficient. Most women remember only three, for it is about the third dose that amnesia is evidenced. In a properly administered dosage there is no diminution in the force of the contraction, and dilation goes on more rapidly than normally. Mothers who have received this treatment say they remember only two or three pains after the first injection, and the intensity of these gradually decrease. This shows that analgesia is obtained quite early.

Many physicians have asked wherein this treatment has any advantage over chloroform, ether or nitrous oxide. The answer is here—it is a **FIRST STAGE HELPER**, and here it practically stands alone.

The second stage is lengthened—I think all agree upon that point; and if there is a disadvantage at all, it is here, for in many cases it does away with that voluntary effort which the fully conscious patient would exercise. In most observed cases, no demand was made upon the patient in order to avoid arousing her. The latter part of the labor was prolonged and if pituitrin seemed indicated was administered, but occasionally low forceps were used to lift the head out of the vagina as it were.

In Freiburg I noticed a very definite correlation between poor abdominal pressure and the necessity for the use of pituitrin. I also noticed that when pituitrin was used, forceps were usually necessary to complete the delivery.

As a large percentage of the women of Baden have contracted pelvis, it is difficult to determine whether the necessity for forceps was due to this fact, or to the action of the drugs used according to the Siegel scheme to produce the twilight sleep.

Dr. Sears of Boston, who visited Dr. Knipe's ward, suggested that a firm but adjustable abdominal bandage would be of service in affording the pressure and resistance which relaxed abdominal muscles failed to give. He reported having used it for years and considered it avoided the necessity for pituitrin. The bandage should be used as carefully as pituitrin and only after dilatation is complete. During the birth of the head a general anesthetic should be used, as the twilight sleep is too light to be undisturbed by the final expulsive pains as well as the additional light and bustle attendant upon the birth.

The third stage, or the expulsion of the placenta, usually ends normally. It is important to avoid premature manipulation of the uterus and only light abdominal palpation should be used to keep informed of the condition of the parts. Only in cases of hemorrhage or prolonged retention of the placenta should the Credé manipulation be used. A routine hypodermic of ergotol is used in the Gouverneur Hospital.

The after treatment as given in Freiburg is not a necessary part of the twilight sleep. The absence of exhaustion led to the adoption of early rising, but it must be remembered that the patient

is prepared for it by a system of exercises instituted eight or twelve hours after labor. The uterus is usually below the pelvic brim by the fifth or sixth day. In the first-class wards a system of hydrotherapy is instituted about the tenth day, consisting of sprays of various degrees of temperature and force used upon the abdomen. The exercises and early rising are being tentatively tried out at the Gouverneur Hospital. The patients are advised to return for examination over a considerable period of time, and reports show no unfavorable results. It is realized, however, that a long period must elapse to judge of the final result.

The children as seen at this hospital showed no ill effects of the twilight sleep, and except for two or three which had the cord about the neck, they all cried immediately.

The effect upon the child is watched by auscultation of the heart every 15 minutes. If the drug is given too rapidly for the mother to eliminate, or too near the birth, the infant suffers from a cumulative effect which is evidenced by changes in the foetal-pulse rate and at birth by depression of the respiration evidenced by postponement or enfeeblement of the initial inspiratory movement. My observation has convinced me that this can be avoided by carefully regulated dosage. Gauss considers the condition of the child a criterion of the proper administration of the drugs. All the cases seen at the Gouverneur Hospital gave perfect results as to the child, thus proving the safety of "Individualization of dosage."

So much in explanation of the opposing views of those who have visited the Freiburg Clinic during the last year. There are another group of physicians who dismiss the subject of twilight sleep with the remark, "We tried it years ago and discarded it as dangerous." Gauss himself explains those early failures as due to several factors.

The first and very important one was the inability to get a stable preparation of the drug. That now has been overcome.

Second—Failure to study the individual patient in administering the drug.

Third—Attempting to force the condition in too short a time, causing a relative overdosing.

Fourth—Beginning the injections too early—before it was determined that the pains were those of true labor and not the false pains present in uterine inertia, which is the greatest contraindication to treatment.

Fifth—Attempting to do away with all evidence of pain—which means saturating infant with the narcotic drug—and thus jeopardizing the infant's life.

Gauss' report of the second 500 cases shows a great improvement in all ways over the first 500 cases—when he was studying the action of the drugs—alone and together and working out the memory test. Instead of giving it up as dangerous, he eliminated the danger by constant experimentation and observation, and those who have read the literature giving the details of his painstaking work, and have seen well-conducted cases adhering closely to his method, cannot help but agree

with Dr. Krönig that it is an efficient method of eliminating the fear and pain of parturition.

Preparation of the Drugs. Scopolamin hydrobromide is derived from the scopol plant; hyoscine hydrobromide from hyoscyamus. Both belong to the same genus and as chemists can find no difference, they are considered identical. Scopolamin may be used in fresh solution, or be preserved in a ten per cent. solution of mannitol-alcohol according to Straub's formula. If ampuled to be kept for any length of time, Jena glass should be used, as there is some chemical reaction between the solution and the lead in flint glass.

Test of Solution. Kessel has shown that one drop of a weak solution of potassium permanganate is a delicate test for apatropin, one of the dangerous decomposition products. It gives a brownish yellow color when present.

Strength of Solution:

Scopolamin 1 cc—0.0003 gms. (1/200 gr.)

Morphine 1 cc—0.01 gms. (1/6 gr.)

Narcophine 1 cc—0.03 gms. (½ gr.). Substituted for morphine in the Siegel method.

Narcophine is claimed to be less depressant to the respiratory function of the child, and to have other advantages over morphine. The Council on Pharmacy and Chemistry was unable to accept the therapeutic claims for it. (*Journal A. M. A.*, Nov. 21, 1914.)

Dosage. The first dose in scopolamin-morphine-amnesia is:

Scopolamin hydrobromide 0.003 (1/200 gr.)—0.00045 gm. (1/133 gr.) and

Morphine hydrochloride 0.01 gm. (1/6 gr.)

Scopolamin is repeated as necessary, the second dose usually in about three-fourths hour, but it may be two hours, and the dose may be the same or less than the first. Subsequent doses are decreased about one-half, and the interval lengthened. The action of the morphine is comparable to that of nitrous oxide in a general ether anesthetic; it gets the patient under so that scopolamin may get in its work and accomplish "forgetfulness of present events." Gauss' early ill effects upon labor and upon the child were due to repeated doses of morphine. His advice is to allow generally two hours to elapse between the last injection and the probable time of birth. The average number of doses is five or six. Amnesia sets in about the third dose. There is a very small percentage of patients unaffected by the drugs. It is needless to say that the twilight sleep requires a high degree of obstetrical knowledge.

General Conclusion. The twilight sleep requires the same careful administration as any anesthetic. It should be given in a well-equipped hospital. It offers a means of alleviating the pains of labor, and if the dose is individually adjusted, is without danger to mother or child.

OBSERVATIONS ON THE DAMMERSCHLAF OR TWILIGHT SLEEP.*

By B. F. SANDOW, M. D., Oakland.

It is the imperative duty of the physician to relieve pain, whatever the indication and whatever the cause, and it is the obvious duty of the obstetrician to alleviate the pains of childbirth. This principle has been recognized from the earliest times, when our art was in its most primitive state, and attempts at pain mitigation and palliation have been made among the uncivilized and the aborigines.

This great problem of pain alleviation in the parturient woman is still confronting us today and many and various attempts have been made to meet it. Chloroform, ether, nitrous oxide, chloride of ethyl, morphine, scopolamin, heroin, antipyrin, alcohol, cocaine, spinal anesthesia, and other agencies have been employed to lessen the pain in labor. All these means afford relief in some measure, but to the employment of some well founded objections developed, while others proved to be ineffectual and abortive.

You are all more or less familiar with the "Dammerschlaf" or "Twilight Sleep," the scopolamin morphine treatment in childbirth. Its elaboration and employment for the relief of labor pains marks a distinct advance in obstetrical science. My aim in addressing you is to render a statement of my observations and my experience with this treatment in about ninety cases, while doing postgraduate work during the past year at Freiburg and München.

As early as 1902, Steinbüchel in Germany employed scopolamin and morphine in obstetrics for the relief of labor pains. He emphasized the superior advantages of it over all the heretofore known methods. Among his followers Krönig and Gauss in Freiburg in particular elaborated this treatment, and Gauss in 1906 published a record of his first 600 cases. When he and Krönig visited this country last year a further report of 3000 successful cases, from the Freiburg clinic, was submitted at the meeting of the American Gynecological Society in Chicago. Following Gauss' first report, many obstetricians in this country gave the method a trial, but soon bad results were reported by many and the treatment came into disrepute and was practically abandoned as dangerous, asphyxiation and death of infants as well as hemorrhage and prolongation of labor being claimed. According to Knipe, New York, in a recent paper read before the Section on Obstetrics in the New York Academy of Medicine, the reported bad results were due:

1. To poor preparations of scopolamin.
2. To the use of too much morphine.
3. To attempts to achieve absolute painlessness in childbirth.
4. To a technic which was entirely different from that used and recommended by Gauss.

I fully concur with Knipe and believe that with the adoption of and adherence to the Freiburg

* Read before the Alameda County Medical Association, February, 1915.

method very satisfactory results may be obtained. Obstetrical experience and judgment are requisite to ensure success, and it should be insisted upon that the treatment be carried out in a well-appointed maternity or hospital, though in some cases I see no reason why the twilight sleep should not be given in the house of the patient, provided the environment can be adjusted in a measure to that prevailing in a well ordered maternity.

I desire to emphasize the importance of employing a reliable and stable preparation of scopolamin; the usual preparations were found to be unstable in their physiological effects, as well as subject to an early decomposition.

Straub of Freiburg evolved the so-called mannit-scopolamin, a stable preparation, manufactured by Hoffmann-LaRoche. It is put up in ampules of 1.1 c.c. ready for use, and contains 1/200 of a grain of scopolamin. The use of morphine has likewise been largely abandoned in favor of narcophin, a meconate of morphine and narcotin, 3 grammes of which represent 1 gramme of morphine. Narcophin is said to be devoid of the depressing effects of morphine upon the infant, and is put up in ampules of 1 c.c. each containing 1/2 grain of narcophine. (It has not been accepted by the Council on Pharmacy and Chemistry.)

The technic and dosage are as follows: When the patient is beginning to have regular labor pains, and when they are beginning to become irksome; that is, when true labor is established, and the os is beginning to dilate, 1 1/2 c.c. of the improved scopolamin, combined with 1 c.c. of narcophin are injected hypodermically, preferably into the thigh. The same dose of scopolamin is repeated in three-quarters of an hour, and after the same interval, another combined but diminished dose of scopolamin and narcophin is given, amounting to 1/3 of the doses of scopolamin previously given and of 1/2 of the dose of narcophin. Thereafter these small doses are repeated at one and one-half hourly intervals, every third dose of scopolamin being combined with narcophin.

This is based upon Siegel's routine treatment of 220 cases and was found to answer admirably in almost all cases. On an average, five or six doses are required to conclude labor under the twilight sleep in average and uncomplicated cases. In addition, and to insure perfect success, 10 c.c. of chloride of ethyl are given by inhalation at the moment of the birth of the head.

It is essential that perfect quiet be maintained, and that the patient be protected against strong light, since it was found that they are exquisitely sensitive to both light and noise.

To safeguard the infant in utero, frequent examinations are made of the fetal heart tones and if any alarming symptoms develop, prompt measures are taken and eventually labor is terminated by forceps.

As regards the memory test, advised by the Freiburg school, I found it no longer in use in the general wards at Freiburg and Munich, though it is employed by Krönig and Gauss in their private wards.

The cardinal point in the successful conduct of

the Dämmerschlaf is the dosage. One must use judgment and acumen in applying the treatment. The social and physical status, possible idiosyncrasies of the patient, all must be considered. Women of the more cultured classes and those of the neurasthenic type are more susceptible to the drugs.

Gauss and Siegel maintain that there exist no counter-indications to the treatment, except primary uterine inertia. Precipitate labor precludes the employment of the treatment.

There can be no question raised concerning the great blessings this treatment offers to suffering parturient women. As to the dangers involved to mothers and infants, it is admitted that they are nil as regards the mother. With regard to the infant, they may be reduced to a minimum in the hands of a competent experienced accoucheur. The statistics offered at Freiburg and Munich show no higher mortality than elsewhere, where other methods of pain alleviation are still in vogue.

One great achievement alone is the rapid recovering of the mother. The absence of anxiety, excruciating pain and resulting nervous shock leaves the mother in much better physical and mental state at the end of labor. To more quickly restore muscular tone, a system of active movements, resembling the Swedish regime, are in vogue in Freiburg and are begun as early as the *second day after labor*. At Freiburg and Munich women are up and around, as a rule, on or after the fourth day. Conservative judgment and experience, however, will prompt us to insist upon a longer period of rest, say a week or longer.

I will formulate my observations as follows: The majority of the women receiving the twilight sleep gave birth without having any recollection of it, that is, amnesia was perfect. A few claimed to have felt pain at certain periods of labor, but no recollection was had of the birth of the child, and vice versa, the birth of the head was remembered only.

No case of absolute failure was observed. None of the mothers were at any time in danger or showed alarming symptoms. Excitement and hallucinations were noted in many instances. Facial hyperemia is common. Great thirst is invariably complained of as well as dryness of lips. More or less retardation of uterine contraction was noted and in some instances required from one to three hypodermic doses of pituitrin.

Prolongation of labor amounts, on an average, in primiparae to about one hour and a half, and in multiparae to about half an hour. Lacerations were few, and certainly less than when the patient is wide awake, in pain and hence restless. Forceps were used in about 8% of the cases. Hemorrhages due to atony were not observed. No disturbance of lactation was noted.

Most babies were born seemingly uninfluenced by the drugs, though in many instances presented a more or less bluish discoloration that appeared to be quite harmless and disappeared in from five to ten minutes.

Cases of slight apnea or oligopnea were noted frequently as well as a few cases of severe apnea,

requiring efforts at resuscitation. One infant was stillborn. One was deeply asphyxiated and could not be revived.

Concluding, I maintain that in conscientious painstaking hands of a trained obstetrician, and by adhering to a technic outlined in the foregoing and described as the Freiburg method, the danger incident to the use of scopolamin and morphine may be reduced to a minimum; that the "Twilight Sleep" in properly selected cases is of inestimable value and a wonderful agency for rendering childbirth humane.

THE SILVER IODIDE EMULSION IN PYELOGRAPHY.

By LEON JOSEPH ROTH, M. D., Los Angeles.

Recent surgical experiences and animal experiments have demonstrated that there exists an element of danger in the introduction of collargol solutions into the renal pelvis. The results of some of these injections have been of such serious nature that fatal issues have followed. Postoperative and post-mortem examinations of renal specimens have shown diffuse infiltration of the solution into the pyramids, and renal structure generally, with collections in the cortex and subcapsular region. This has produced infarcts and necroses. In some cases necropsies have demonstrated diffusion in the blood vessels and viscera.

once the solution has penetrated the pelvic tissue, or has entered the papillae, the diffusion is produced by the physical law or it immediately enters the venous stream, and is thus distributed into the kidney per se, or the kidney and the thoracic and abdominal viscera.

An article by Kelly and Lewis which appeared in the June 1913 number of *Surgery, Gynecology and Obstetrics*, contained a brief exposé of the iodide emulsion and two case reports. Other reports have since appeared and all have been commendatory. Briefly the emulsion is a suspension of the silver salt in mucilage of quince seed. It is standardized at 5%. In appearance it is of creamy white color, and viscid consistency. It is odorless and does not stain. In intensity it equals the X-ray resistance of collargol at 10%, and is minus all the objectionable features of the latter, including the cost. It is soluble in the urine.

In the cases thus far injected no pain has been produced, a very slight sensation of "fullness" is experienced and the radiograph taken at this instant. The thickness of the emulsion, and slowness of its oozing through the tip of the catheter probably prevents extreme dilation of the pelvis. It passes freely through a medium size catheter, number seven, for instance; if a smaller catheter is used the emulsion may be diluted without greatly diminishing its ray resistance. Dilution is especially suggested for injection of the larger hydro-



I

It appears that the method of introduction either by syringe or gravity, has little or nothing to do with the infiltration. The penetrative power of collargol, highly lauded for this virtue in the treatment of specific urethritis, reasonably appears to be the noxious influence. Of possibly more than passing interest is the fact that renal hemorrhage is being considered a contra-indication to its use. The method of absorption is not perfectly understood; it seems logical, however, to suppose that



II

nephroses. This is practical also in bladder work. Warming the substance in a water bath seems to slightly increase the fluidity, and makes the injection less noticeable to the patient. After the injection the emulsion is itself permitted to escape through the catheter for a varying time, and the catheter withdrawn either with or without thinning by a sterile aqueous solution. No ill effects have followed even if the catheter be removed within a short while after injection, though it is preferable

to wait a reasonable length of time to permit reduction of the pelvic contents.

The results have been perfectly satisfactory. One case went to operation the day following the injection, and no trace of the emulsion found.



III

The accompanying prints from reduced pyelographs (Dr. Wm. B. Bowman) of calculus in the inferior calyx I, of beginning hydronephrosis with a twisted and slightly dilated ureter II, of a cystotomized neoplastic bladder, with catheter in position III. (2% emulsion) evidence the comparative value of the iodide.

CASE OF SYMPATHETIC OPHTHALMIA.*

By C. S. G. NAGEL, M. D., San Francisco.

Many of you are aware of two axiomatic facts *re* sympathetic ophthalmia: first, that it is absolutely preventable by early enucleation of the injured eye, and second, that sympathetic ophthalmia is practically always fatal to the affected eye. From the former fact has resulted a wholesome fear throughout the practising profession that in the brilliant Mauthner's words has led to the sacrifice of hecatombs of eyes. And though this in many instances has been quite unnecessary, yet since such eyes are generally badly damaged, their sacrifice is infinitely better than a possible loss of the second eye. Without a doubt this latter event is one of the most pathetic situations in practical medicine, spelling as it generally does, absolute blindness which could have been prevented.

Since from all said it fortunately follows that cases of sympathetic ophthalmia are not often seen, I opine the demonstration of such a case to be of general interest.

I will only briefly state the following from the history. This elderly man had been operated on for carcinoma of the tongue; some years after complained of left eye being painful. The possibility

of metastasis has been considered, I understand (*re* which I may say in parenthesis that a priori that was not very likely—strange to say the majority of metastatic carcinomata of the eye—by the way, about 70 reported cases having originated from mammary carcinoma). Later on the diagnosis of primary glaucoma was established and a scleral trephining performed. Unfortunately an intraocular hemorrhage occurred subsequently and the eye remained troublesome. Enucleation was advised. When I first saw the patient some months ago, the eye was in a strongly inflamed condition from iridocyclitis. The chief practical result of my examination was the condition of the other eye. Numerous very small deposits on Descemet's membrane, the same as you see to-day, only much smaller; ciliary sensitiveness to touch and external lachrymation. Photophobia. Fundus not visible for details. Diagnosis, ophthalmia sympathica.

The conclusion was that enucleation of sympathizing eye (i. e., eye operated on for glaucoma) almost surely would come too late. Such has proved to be the case;—after the usual (i. e., in "sympathetic irritation") striking prompt subsiding of the external symptoms of irritation after enucleation, the disease has gone on its fatal course in spite of continuous strong inunctions of mercurial ointment and prolonged administration of big doses of salicylate of sodium (after Widmack).

Discussion.

Dr. W. F. Blake: I want to say a word about this case, as during the course of the man's illness he passed through my hands. He came to me originally with the diagnosis of carcinoma of the eye, which diagnosis I was not able to confirm; but I did find, as Dr. Nagel has related, an attack of acute glaucoma, and the man was trephined to relieve the tension and the irritation. Perhaps a mistake was made in the first place by doing a trephine in this particular type of glaucoma—acute and not chronic. Possibly an iridectomy should have been the operation rather than trephining. At all events, the eye progressed badly after operation and I began to fear I had made a mistake and that there was carcinoma of the eye. The man had two minor accidents to his eye while I was looking after him, and various times we discussed the advisability of removing the eye to protect the other one. After the second accident he had a hemorrhage, the eye became acutely painful, and I insisted that he have it removed. He disappeared, and I was very glad to hear later that he was under Dr. Nagel's care. The eye was later removed, but evidently too late, as sympathetic ophthalmia had already set in.

This case illustrates strongly the danger of sympathetic ophthalmia in these slow-going chronic conditions where there is trouble in the ciliary body of one eye.

SOME EXPERIMENTAL DATA ON THE MORESTIN TREATMENT OF PERITONITIS.

By SAXTON POPE, M. D., San Francisco.

At the Societe de Chirurgie in May, 1913, Morestin read a report of two cases of peritonitis treated by the use of ether intra-abdominally. The work was done by Temoin at the Bichat Hospital, and the procedure consisted simply of sponging out the soiled peritoneal cavity with ether and leaving a quantity of this fluid in the abdomen. Morestin

* Presented before San Francisco County Medical Society, March 9, 1915.

had been using this treatment since 1901 and felt convinced of its usefulness.

Dr. Auvray reported a case of intestinal perforation in which, after cleansing the peritoneum and repairing the perforation, he poured a quart of ether in the abdominal cavity and closed his incision after sponging out the excess of ether. The patient made a splendid recovery.

On August 10, 1914, Dr. Edmond Delorme, Inspector-General of the Military Health Service, read a paper at the Academie des Sciences, in which he recommends this treatment in gunshot wounds of the abdomen. In none of these reports was experimental data put forth to prove the efficacy of the method. Deductions from a few clinical cases are proverbially fallacious. Because a human being may survive a surgical procedure does not prove that this procedure is good for him.

From a theoretical standpoint the use of a toxic irritant, such as ether, in the peritoneal cavity certainly does not seem rational. In the first place, ether is not an antiseptic to any appreciable extent. It is a tissue irritant, a solvent of fats and colloids, and definitely toxic. More than this, one would question the beneficial effect of distending the abdomen with gas of any sort in the presence of an infection.

To determine the value of this method experimentally, a series of twelve rabbits was used, two of which were controls. Eight were treated as follows: Under general anesthesia the animal was laparotomized, the colon drawn out, an inch incision made in the viscus, a portion of its contents smeared over the peritoneum. The intestinal wound was closed with silk, the peritoneum gently swabbed with sponges soaked in ether, a drachm of ether poured into the cavity, the colon returned, and the abdominal incision closed with silk.

When the ether comes in contact with the abdominal viscera, the animals experience pain, though previously anesthetized; later they seemed shocked and are profoundly narcotized. Kymographic records show a pronounced fall in blood pressure at this point, in studies on dogs. All of these rabbits developed a vicious peritonitis marked by hemorrhagic plastic deposits, purulent exudate and agglutination of the intestinal loops. Six died within a few days—from sepsis or obstruction. Two remain at the end of ten days—in fair health, but show multiple peritoneal adhesions.

Two other rabbits were opened, a drachm of ether poured in the abdomen and the wound closed. Each developed a purulent peritonitis; one died the third day, the other died from a secondary anesthesia, at which time cultures were made and proved positive to staphylococcus aureus.

This shows that a sterile abdominal cavity, insulted by an irritant such as ether, is not capable of defense against its own intestinal flora. This has been proved before—that carbolic acid or any similar destructive agent, when put on a peritoneal surface with the idea of sterilizing the field, simply destroys the integrity of the tissues to such an extent that infection through the intestinal wall always takes place.

Two control rabbits were laparotomized, had

their peritoneums soiled by a colotomy wound, were washed with salt solution and closed. These made an uneventful recovery and at autopsy presented a fairly normal peritoneum.

These few experiments show rather conclusively that for rabbits, at any rate, the treatment of the peritoneum with ether—whether infected or not—is a highly improper procedure. Animals so treated develop a purulent peritonitis, or sustain an augmented lesion; recovering from this they present multiple peritoneal adhesions and may die of ileus.

The controls, washed with salt solution, do very much better and recover completely.

While this work is rather tardy and its findings unnecessary to convince many surgeons of the fallacy of the Morestin method, in view of its recommendation to army surgeons in the present war, and with the hope that it may deter some of the unwary from using this risky procedure, it is here placed before you for consideration.**

STREPTOCOCCIC INFECTIONS.*

By J. LA RUE ROBINSON, M. D., Reno, Nevada.

The purpose of this paper is to bring before the Society some of the most recent findings concerning the morphology, cultural characteristics and pathology of the streptococcus group.

Streptococci may be found almost everywhere, in water, milk, dust, feces of animals or man, and most of them are non-virulent, yet their morphological appearance is in common with the pathogenic strains.

All streptococci multiply by division in one plane of space only and are spherical in form, excepting that as the line of cleavage of cocci, when in chains, is perpendicular to the long axis of the chain, adjacent cocci often show slight flattening of the contiguous surfaces, forming, as it were, a series of diplococci arranged end to end.

A theory is advanced by Hiss and Zinsser that the streptococcus pathogenic for man is more virulent when growing in long chains and that short chains are inclined to be more saprophytic. Yet following this statement they say that a differentiation of this kind can hardly be relied upon.

The streptococcus which we shall here consider is the streptococcus pyogenes. The temperature most favorable to their growth is 99½° Fahrenheit, which is very unfortunate for the human.

Among the domestic animals those most susceptible to experimental streptococcic inoculations are white mice and rabbits. Guinea pigs and rats are less easily infected and the larger domestic animals such as cattle, horses, goats, cats, and dogs are still more refractory. Almost complete immunity prevails among birds.

Rosenow has classified several different strains which he illustrates as follows: "Taking the flexed hand, the hemolytic streptococcus occupies the position of the little finger, the pneumococcus the place of the index finger, the streptococcus viridans (representing the group of more or less saprophytic,

** From the Laboratory of Surgical Research, University of California Medical School.

* Read at the Nevada State Medical Association meeting, October 10-13, 1914.

non-hemolyzing streptococci), the middle finger the streptococcus 'rheumaticus,' the fourth finger, and the streptococcus mucosus (partaking some of the properties of both pneumococci and streptococci), the position of the thumb. In this grouping there is in general an increase in parasitism and virulence as we approach the thumb. (Streptococcus mucosus.)

"The fact that they are members of the same family is illustrated by their being members of the same hand."

Rosenow has transformed the hemolytic streptococcus, the streptococcus viridans, and the pneumococcus one into the other.

Billings, Davis, Jackson and Rosenow all agree that in many infections a pathologic specificity for certain tissues is shown when injected into rabbits, and other animals. Strains obtained from cultures made from tissues and exudates of patients suffering from chronic arthritis produce arthritis in the inoculated animal; strains obtained from the focus of patients with hemorrhagic nephritis, cause nephritis in the inoculated animal; strains obtained from the focus in the patient with rheumatic fever, endocarditis and pericarditis result in pancarditis and acute arthritis in the inoculated animal.

In the cases which we are about to report pure cultures of streptococci were grown in cases 1, 2, 7, (8?) and 10.

Case 1. I saw Andrew D., age 4½ years, February 27, 1914, in consultation with Dr. Wullschlegler. The patient was suffering with a double tonsillitis. His tonsils were very large, and had a history of repeated infections. I prescribed for immediate treatment, and recommended enucleation of the tonsils when over the present attack. Dr. Johnstone saw this patient March 24, 1914, and diagnosed a double pneumonia.

Dr. W. continued to wait upon the patient, and told me from time to time that he was still sick, until April 5th, when Dr. W. called me again.

I found the patient with tonsillitis, some croupous membrane about the fauces, double otitis media, and a spasmodic cough. The patient was in an inside room in a hotel with no outlet for ventilation excepting a door opening into another room. Believing the unsanitary surroundings the cause for the continued sore throat, and croupous membrane we sent the patient to the hospital on April 15, 1914. At this time the pulse was 116, temperature 103°, and respiration from 24-30. On the afternoon of April 18th the patient was given coffee, which he vomited. My treatment consisted of spraying the nose in the recumbent position with Dobell's solution, swabbing the throat with silver nitrate, and using ichthyol-phenol-glycerine in the ears. The symptoms gradually ameliorated until May 11, at which time the chart showed he was about normal. One week after he entered the hospital the surface of his body was covered with a bronze hue which faded away as he improved. There was no desquamation.

Urine Analysis: Reaction, acid; color, pale amber; sediment, slight; sp. gravity, 1020; no albumin, no mucin, no sugar, no bile; slightly increased indican; 3° urea; microscopic examination negative.

May 1st, patient vomited a dose of laxative.

May 2nd, the tonsils were removed, and the patient had no further trouble, going on to complete recovery.

During the latter part of April little children from the outside were brought into the sick room by friends, and played with the patient daily. So

far as known none of them contracted the infection.

Case 2. Bertram D., age 5½, brother to Andrew D. These two patients, and their mother, Case 3, lived in the same room during their stay in the hospital, which was from April 15th, 1914, to May 16th, 1914. I saw Case 2 April 5th. Severe tonsillitis, otitis media both sides, croupous membrane covering tonsils, and pharynx extending up into naso pharynx. Cough irregular. He went to the hospital April 15th with his brother Andrew. Pulse 110, temperature 104.2°, respiration 34. This patient was very nervous, and the pulse and respiration were very much accelerated when the doctors called.

April 15th, the patient vomited a dose of laxative.

On the 16th a rough goose flesh rash on the body was noticed.

He vomited coffee on the 18th.

Large quantities of mucous were expectorated daily.

April 20th patient complained of soreness on the right side.

April 21st patient complained of soreness on the right side of nose and throat.

April 25th, patient had been very peevish for past week, crying a great deal. The throat was very sore. The outer skin rubbed off like sand. Children played with his brother in the same room daily. The temperature ranged from 100°-101°, pulse around 115. His right eyelid began to swell, and on April 26th was very much congested, and swollen shut.

Urine Analysis: Reaction, alkaline; color, amber; sediment, slight; sp. gravity 1024; distinct trace of albumin; no mucin, no sugar, no bile; excessive indican, 3.2% urea, and microscopic examination negative.

Bichloride compresses 1-10,000 were applied to the eye until May 8th, then hot compresses until May 16th, when patient left the hospital. Cultures from the discharges of the eye showed a pure culture of streptococci.

Case 3. Mrs. D., mother of Cases 1 and 2, had an attack of tonsillitis April 18th, and extensive croupous membrane covered both tonsils. There was considerable swelling, and the throat was sore. I swabbed her throat daily with ten per cent. silver nitrate for three days. At the same time she gargled with myrrh gargle, and entirely recovered within a week.

Case 4. Miss Y., age 20, an undergraduate nurse, was detailed on preceding case April 19th.

April 23, complained of a very sort throat, with a croupous membrane covering both tonsils. I swabbed her throat with ten per cent. silver nitrate, and gave her a myrrh gargle to use, with the advice to come to the office for treatment if her throat was not better within twenty-four hours. Her throat improved and she continued to work until May 1st, when she had a relapse, and Dr. Lewis was asked to see her. He swabbed her throat with twenty per cent. solution of argyrol, and prescribed potassium chlorate and alum for a gargle. She apparently was better for two or three days, when she had an attack of endocarditis, and at the same time the membrane again spread over her throat and up into the naso-pharynx.

I was asked to see her again on May 5th. She was toxic, the pulse 120 and soft, and the temperature running about 104°. The membrane was easily scraped from the throat with a swab, but would reform rapidly. Her spirits were good, and she declared every day she would be better in a day or two.

She vomited a bilious vomit every day from May 1st until May 7th, when at 11 a. m. she had a sinking spell, another about 1 p. m. and died at 4:40 p. m.

Just before she died her body was covered with a dull red rash.

Case 5. Miss S., nurse, waited on Miss Y. dur-

ing her illness. May 8th she complained of a very sore throat, a croupous membrane covering tonsils. Temperature 103°, pulse 105, vomiting. I swabbed her throat with silver nitrate ten per cent., sprayed her nose with Dobell's solution, and ordered her to bed. Urine Analysis: Negative.

May 9th, throat very sore and still covered with a membrane. Temperature 100°, pulse 90, patient feeling better.

May 10th, throat much better, only a few specks of membrane remaining. Patient wanted to get up.

May 11th, patient left her bed.

May 12th, patient came to my office; throat free from membrane but still red. I discharged her. No eruption.

Case 6. Dr. W., who attended Andrew D. and Bertram D. continuously from some time in February until May 14th, when he went to bed with a chill, and very sore throat. There was a great deal of swelling about the mouth. The temperature was 104½°, remaining about the same for a week.

His arm and shoulder began to swell, and abscessed. In about two weeks Dr. Lewis lanced the abscess, and evacuated large quantities of pus. The doctor remained quite sick with sore throat. (No chart kept.)

About June 10th a small abscess occurred just above the left knee from which pus was evacuated. No eruption.

Case 7. On April 27th, 1914, while I was waiting on Andrew D. and Bertram D., but before I saw Miss Y. after she went to bed, I did a left lower turbenectomy for Mrs. P., which was followed by a severe infection of the nose and throat involving the lymph glands on the left side of the face. The left eye was swollen shut similar to Bertram D.'s. The left ear was swollen. She vomited for several days. There was no eruption, and no otitis media.

April 29th, I called to see Mrs. P. and she complained of the packing in her nose. I removed the packing with a pair of pliers. Mrs. P.'s son, five years of age, picked up these pliers, and put them in his mouth. His mother does not know how long he had been playing with them.

Resolution was slow, and in keeping with other severe nose and throat infections of this type.

Synovitis developed on the left side, causing an almost complete ankylosis of the jaws.

Case 8. May 2nd Paul P., the five-year-old son of Mrs. P., who had picked up the pliers used in removing the packing from Mrs. P.'s nose on April 29th and placed them in his mouth, developed a high fever and vomited. Mrs. P. thought that he was bilious as he had been eating heartily for the past several days. He began to complain of earache in the right ear, which ruptured and discharged profusely. He developed a bronze rash similar to Bertram D., and it scaled off in the same manner. His ear got well promptly, and resolution was complete.

Case 9. May 8th Willis, age 14, another son of Mrs. P., had a sore throat, earache with a discharge of pus, but no other symptoms. He felt indisposed, but did not go to bed. He had no rash or any symptoms of a suspicious nature.

Case 10. Mr. X., age 39. On September 6, 1914, he developed a sort throat. On the 7th he went to bed. On the 8th he developed a general eruption. From the 7th to the 10th he had considerable fever and profuse sweats.

A physician was not called until the 10th, when his morning temperature was 102°, and pulse 96. His entire body was covered with a smooth, red rash, most marked in the thighs. On pressure the white imprint of the hand was left. There was a croupous membrane over the right tonsil. The roof of the mouth and soft palate were peppered with a red rash. The tongue was moderately coated and had bright red edges. At this time he

felt well except for the sort throat. He gave a history of having vomited on the 7th and 8th. Quarantine established.

His temperature on the afternoon of the 10th was 101°, pulse 96. On the 13th, temperature and pulse normal, and skin clear. On the 21st quarantine was removed.

He had an infection of the left thumb before the throat symptoms appeared, with red lines extending to axilla.

There was no desquamation except along lines of lymphangitis above mentioned, and an area about the size of a silver dollar on the right wrist.

Discussion.

Dr. Johnstone: In the series of cases reported by Dr. Robinson there are several points of general interest worthy of discussion. First, the frequency of streptococcic infections in this section, most men who have practiced elsewhere agreeing that they meet with the infection much more frequently here than other places in their experience. This especially is true of throat and nose infections, and typical tonsillitis. The reason for this frequency is not clear.

Second. The toxic rashes and their differentiation from scarlet fever is worthy of careful consideration, especially when we remember that practically all scarlet fever throats show the same streptococcus infections and hence cultures from the throat fail to differentiate. We must depend rather on the entire symptom complex—that of simple streptococcus infections being quite different from the symptom complex of scarlet fever—and especially with regard to the rash—which if a toxic rash usually tends to appear later, has more of a tendency for a rough surface and more of a dusky or copper color and desquamation not so typical and marked.

Many cases so closely simulate scarlet fever that with our present knowledge it is well nigh impossible to differentiate with certainty, and in such cases, for the benefit and safety of the public quarantine should be established and the case regarded as one of scarlet fever.

The relation of the streptococcus group to the various disease processes and to each other is a most interesting and complicated one. Rosenow has probably done more to unravel this complicated enigma than any other investigator. He has succeeded for the first time in transforming any one member of this group into any other member of the group at will by varying their cultural environment with regard to media, oxygen pressure, etc., and has thus brought together into one group and shown their relationship a half dozen or more varieties of micrococci classified in the past as distinct and different organisms as the pneumococcus streptococcus hemolyticus, streptococcus viridans, streptococcus rheumaticus, etc. Furthermore, he has been able by animal inoculations of these transmuted strains to produce the lesions characteristic for each.

With regard to rheumatism, animals chilled and then inoculated develop the lesions much more uniformly.

This strain grows better at a somewhat lower temperature than the other strains of this group. This may account for the well-known clinical observation of the occurrence of acute inflammatory rheumatism following exposure to chilling and dampness.

Throat strains isolated during an attack of acute inflammatory rheumatism and inoculated into animals, produce arthritic lesions in the inoculated animals, while strains isolated from the same individual several weeks after recovery fail to produce such lesions in inoculated animals, but produce, instead, the cardiac lesions, indicating that the rheumatic strain has been transmuted into the viridans strain which characteristically attacks the heart valves, producing an endocarditis.

Strains isolated from the throat and grown

under conditions to produce a certain degree of virulence, when inoculated into animals tend with striking frequency to produce gastric ulcer. If the virulence be increased or diminished this lesion is not produced but instead rheumatism or endocarditis.

In 25 out of 38 cases of arthritis deformans Rosenow has succeeded in cultivating streptococci or streptococcus-like organisms from the regional lymph glands, and these strains inoculated into animals produce similar lesions. These strains tend toward the anaerobic or grow best at very low oxygen pressure.

This organism has been repeatedly isolated from cases of iritis, conjunctivitis, and from hemorrhages in the sclera, retina and iris.

Several epidemics of sore throat have been reported during the past few years where the source of the infection has been shown to be streptococcal mastitis in one or more of the herd and distributed in the milk. The ordinary streptococcus inoculated into sterile milk very soon changes its characteristics and approaches the more virulent strains, as the streptococcus mucosus, a change which possibly occurs in the streptococcus producing mastitis in the cow, after getting into the milk, and as a result of this change in characteristics of the organism, producing epidemics of sore throat in children drinking the milk.

A SHORT DESCRIPTION OF THE UNITED STATES PUBLIC HEALTH SERVICE EXHIBIT AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION (PALACE OF LIBERAL ARTS), SAN FRANCISCO, CALIFORNIA, 1915.

GENERAL REMARKS.

The Public Health Service has endeavored to present in a popular and comprehensive way the latest methods of preventing the common communicable diseases. With the limited funds available for preparing the exhibit, many things have necessarily been omitted which might properly be shown. However, such material as has been prepared has been made of a permanent character and scientifically accurate as to details of construction and information furnished. The Service will maintain an office on the exhibit floor space, where officers and attendants of the Service will be constantly stationed to explain the different exhibits. All of the Service publications will be displayed for ready reference, and bound copies of these publications will be available in case visiting physicians and health officers desire to consult same. Such exhibits as require to be inclosed in glass cases have been provided with narrow frame bronze cases with plate glass of selected quality to avoid glare and interference with proper vision. The exhibit material is grouped according to the disease which the exhibit material is designed to illustrate; in stages; and methods of prevention. The organization of the U. S. Public Health Service is explained by a chart, and a map shows where officers of the Service are stationed throughout the world. There are also models of various Public Health Service stations, including a hospital, quarantine station, and detention camp.

TYPHOID FEVER.

(a) The Story of a Typhoid Bacillus Carrier. This consists of a series of six pictures illustrating how typhoid fever is spread by carriers. A young

woman, convalescent from typhoid fever, returns to work in a milk store, and infects some of her customers, one of whom dies. These pictures are displayed in a cabinet so arranged that one picture at a time is shown for a space of ten seconds. During the change from one picture to another, a curtain automatically covers the aperture through which the pictures are seen.

(b) Contact Infection in the Spread of Typhoid Fever. Two cross sections of a boarding-house are shown. The same woman serves the boarders and cares for a typhoid fever case. The figure representing the woman moves from the sick room to the dining room, then into the kitchen, and back to the dining room and sick room, being constantly traveling slowly. In the second cross section, three of the boarders are sick with typhoid fever, and one has died; indicated by crepe on the door. A descriptive label shows how this infection might have been avoided.

(c) A House Fly. A model of a house fly accurately made, thirty-two times natural size is displayed. Fly eggs and larvae magnified seventy-five times are also shown. A large number of small vials have been prepared in which are fastened fly eggs, larvae and pupae, and an adult fly. These are to be distributed to health officers and physicians as souvenirs and form a vest pocket exhibit of the life cycle of the house fly.

(d) How Oysters May Become Infected with Typhoid Fever Germs. In this model is shown a sewer mouth, discharging in a river near the seacoast. At the mouth of the river an oyster bed is located. A belt, actuated by an electric motor, slowly revolves under the surface of the water, indicating the current from the river to the oyster bed. Small black lines are painted on this belt to indicate typhoid fever germs which apparently disappear into the oyster shells as they are open for feeding.

(e) Water-borne Infections of Typhoid. Ten cities of the United States, having a population of more than one hundred thousand each, have been selected, and the typhoid fever death rate in these cities for the last ten years is shown by a series of elevations in which each sixteenth of an inch in height represents one death from typhoid fever. Each of these cities has, during the past ten years, installed some method of water purification, which is indicated, and the decrease in the number of deaths from typhoid fever is shown by the decrease in height of the elevations after the introduction of water purification methods.

(f) Influence of the Public Water Supply on the Spread of Typhoid Fever. A topographical model showing the relationship between certain towns and villages along a watercourse which at one time became polluted with typhoid fever germs. The water intake for each town is illustrated, and the number of deaths from typhoid fever during the years in question is shown. A descriptive label explains how typhoid fever infection is carried by streams, and emphasis is made of the fact that it is the time required to pass from the point of infection to the point of spread of the infection, rather than the distance, which governs the possi-

bility of infection. This is done on account of the very general impression that streams purify themselves within a certain number of miles.

(g) Typhoid Fever Death Rate in Various States. A large map of the United States is shown, on which the number of deaths from typhoid fever per thousand during the year 1913 is indicated. In the lower right-hand corner there is a water tank having a valve projecting therefrom. A legend invites the visitor to "Turn the valve and find the typhoid death rate in your State." When the valve is turned, a pointer moves up and down, to be stopped opposite the State for which the death rate is desired. While this is being done a little figure of a man climbs a ladder placed against the water tank and points with his hand to the death rate for the State opposite which the pointer is stopped.

(h) How a Well Becomes Infected with Typhoid Fever Germs. A well model showing a section through the geological formation underlying a typical country home. Drainage from the surface privy reaches the well by following layers of rock.

(i) How a Well May Become Infected Even Though Precautions Are Taken. This model also shows a section through the geological formation, but in this case the owner of the house has installed a cesspool, which under ordinary conditions would give protection, but in this case the underlying strata is limestone formation in which there always occur numerous crevices through which pollution from the cesspool reaches the well.

MALARIA.

(a) Mosquito Habitat Group. The fact that malaria is transmitted only by a certain species of mosquito is very generally known. The habits and life cycle of this mosquito are graphically shown by an enlarged model of an anopheles mounted in a case to illustrate a typical breeding pool of these mosquitoes. The pool of water is shown surrounded by the usual vegetation found in swamp areas. An adult mosquito is poised at the edge of the water, ready to fly. Floating on the surface of the water are models of eggs of anopheles, and suspended below the surface of the water so that it may be viewed by the spectator is an enlarged model of the "wiggler" stage of this mosquito. For purposes of comparison, enlarged models of the eggs and larvae of the culex mosquito are also placed in this group, so that the differences existing between the eggs and larvae of the two species are graphically shown. Descriptive labels on this habitat group explain the various features shown.

(b) How to Avoid Mosquito Breeding. A series of six glass jars designed to illustrate various methods by which mosquito-breeding can be avoided. In one jar the water has been covered by a film of kerosene oil. In another, the water has been treated with larvacide. In one, fish are placed which destroy mosquito eggs and larvae. In another jar the water has been replaced by sand, showing filling. In another, sea water has been added. From another, the water has been removed by drainage.

(c) Mosquito Breeding Tank. A large glass tank over which has been constructed a framework

of glass and bronze wire forms a permanent breeding place for mosquitoes. It is designed to keep a constant supply of mosquitoes breeding in this tank, so as to show the actual living specimens of the various stages in the development of mosquitoes.

(d) Glass Models Showing the Life Cycle of the Malarial Parasite. Twenty-six models have been made by an expert, and are displayed in a consecutive series showing the development of the minute animal parasite which causes malaria, from the time it is introduced into the human system by the bite of an infected mosquito until it is again taken from human blood by another mosquito. The stages of development through which the parasite passes in the body of the mosquito are also shown, and its method of reintroduction into another person.

(e) Charts and maps showing the prevalence and distribution of malaria throughout the United States and the economic loss caused annually by this disease.

PLAGUE.

(a) An enlarged model of the rat flea, which is the principal agent in spreading bubonic plague from rats to man.

(b) A model showing a house of ordinary cheap construction which easily becomes rat infested. An uncovered garbage barrel shown offers an abundant supply of food for such rats as live in the vicinity, and the spaces between the partitions and openings left around improperly installed sewer and water pipes, show how rats freely pass from one part of the building to another.

(c) Rat-proof Houses. Several model houses have been constructed under the supervision of officers of the Service in which the proper methods of construction are shown. It is possible to entirely eliminate rats from human habitations if the proper methods of construction are followed, the details of which are shown by these model rat-proof houses.

(d) The U. S. S. "Ratless." This name has been given to a section model of a ship constructed in such manner that it becomes practically rat-proof. Automatic rat runs are installed so that such rats as might come on board with cargo and stores would be likely to leave the ship through the runways provided. A fumigating machine is installed on deck, and pipes lead to all the holds so that the ship can be easily freed from rats and other vermin. The staterooms, crews' quarters, store room, etc., are rat- and vermin-proof in construction.

(e) The Natural Enemies of the Ground Squirrel. The fact that ground squirrels are subject to infection by bubonic plague is a serious problem in the western states. A constant warfare is being waged against ground squirrels by the local, state and national health authorities in California. The natural enemies of the ground squirrel are shown in this model of a rocky cave, showing owls, snakes, coyotes, eagles, etc., all of which destroy ground squirrels.

(f) Squirrel Destroyers. A full-sized working model of the carbon bisulphide pump used to destroy ground squirrels in their holes. A quarter

section model is also shown so that the internal parts of the apparatus may be seen and understood.

(g) A Map Showing the World Distribution of Plague. In order to avoid the spread of plague, it is necessary to know where cases of bubonic plague exist. All the known foci are shown on this map, which will be kept constantly up to date during the progress of the exposition.

PARASITES OF MAN, INCLUDING GERMS OF CERTAIN DISEASES.

Transparencies and dimensional models have been prepared of thirty-four different common parasites of man, including the germs of common diseases. Glass models of the eggs of seven common intestinal parasites are shown. It is believed that these models will be of great assistance to physicians in fixing the appearance of these eggs in mind so that in making microscopical examinations of excreta to determine the presence of parasites the different parasitic eggs may be easily recognized. Descriptive labels have been prepared for each parasite, giving its life history, statistical data regarding the disease caused by the parasite, and other pertinent information.

YELLOW FEVER.

Yellow fever is another disease which is spread entirely by the bite of infected mosquitoes. The mosquito which transmits yellow fever is strictly a domestic insect and breeds only near human habitations. An enlarged model of this mosquito, the *aedes colopus*, has been made and is displayed in an ordinary wooden cistern or water tank, over which a glass case has been placed. A map shows the world distribution of yellow fever and the possible influence of the change in travel routes in spreading yellow fever to other parts of the world, through the opening of the Panama Canal.

SMALLPOX.

A series of wax models show the lesions of smallpox. This is contrasted with the lesions of vaccination. Seven wax models of a human arm show the different stages of a typical vaccination from the time the arm is scarified until the vaccination sore heals and leaves a typical pitted scar.

TUBERCULOSIS.

A model of the Public Health Service sanitarium at Fort Stanton, New Mexico, is displayed. An enlarged model of the tent house used at this sanitarium has also been prepared. Statistical data in the form of charts showing the economic loss from tuberculosis in the United States are also exhibited. There are more deaths from tuberculosis than from any other single cause. Tuberculosis kills chiefly in the most active and productive period of life.

RABIES.

Two dogs are shown, one being muzzled with the ordinary leather muzzle in common use, and the other with a metallic muzzle designed by an officer of the Service. This muzzle is comfortable for the dog, but absolutely prevents his biting other animals or persons. Charts displayed with these two muzzled dogs give data relative to the prevalence of rabies in the United States and its treatment according to the Pasteur system.

ence of rabies in the United States and its treatment according to the Pasteur system.

ROCKY MOUNTAIN SPOTTED FEVER.

This is a quite fatal disease in certain of the western states. The disease is spread by the bite of an infected tick. Models of the male and female of this tick are shown. A map shows the distribution of this disease, and printed posters explain how the disease may be controlled or eradicated.

TYPHUS FEVER.

A map shows the distribution of typhus fever throughout the world during 1913. This disease, it is now known through the work of Anderson and Goldberger of the Public Health Service, is transmitted only by body lice. A large model of a body louse is shown, and its method of transmission pictorially explained.

TRACHOMA.

The communicable eye disease, trachoma or granulated eyelids, is prevalent in many sections of the United States, particularly in the Appalachian Mountain chain. During the period from October, 1912, to April, 1914, 165,907 persons, mostly school children, were examined by officers of the Public Health Service, and 2,393 cases of trachoma were found; 8,940 cases of trachoma were found among 39,231 American Indians examined during this period. In order that the disease may be recognized enlarged models have been made of the human eye and surrounding region. One of these models shows the natural condition of the conjunctiva of the upper lid when everted. Another model shows the appearance of the upper lid during an active trachoma infection. A third model shows how the eyelid appears after the active stage of the disease has passed and scar tissue has been formed.

DIPHTHERIA.

Blown glass models of the germs of diphtheria are shown and information relative to the deaths caused by this disease is given on printed posters. Charts show the effect of treatment of diphtheria by anti-toxin, and the great reduction in the number of deaths caused by this disease since the introduction of this system of treating diphtheria.

MISCELLANEOUS.

(a) Economic Loss During One Year in the United States Through Preventable Diseases. This is an allegorical group. The figure of Uncle Sam represents the United States and the figure of a dragon represents diseases that could be avoided if proper safeguards were taken. A constant stream of gold is shown passing from the pocket of Uncle Sam into the dragon's mouth. This annual loss amounts to billions of dollars during a year, and is just as real as if the money actually streamed out of the United States Treasury. This loss cannot be prevented by either national, state or municipal health authorities unless every citizen co-operates fully in the efforts made to diminish preventable diseases.

(b) The Village of a Thousand Souls. A model showing a typical country village of about 275 houses. Certain of these houses in various parts

of the village have different colored transparent roofs. Electric lights have been installed in these houses having transparent roofs, arranged in three series; one series of lights show the number of deaths from tuberculosis, these houses having white roofs; another series show the number of deaths from pneumonia, these houses having red roofs, and the third series show the number of deaths from cancer, these houses having green roofs. The lights show up consecutively and at the time the various colored lights appear an automatic sign gives the death rate from the disease in question.

(c) Sanitary and Insanitary Farmhouse. This model shows a typical farmhouse constructed without any special attention to sanitary environment. Mosquito and fly breeding places are present. A surface privy allows the soil to become infected with the germs of typhoid fever and the eggs of hookworm. All of these conditions are corrected on the other half of the model where a proper sanitary farmhouse, barn, and surroundings, are shown.

(d) Sanitary and Insanitary Rural Schools and Surroundings. The model showing an insanitary rural school portrays the usual conditions found at ordinary country schools. The part of the model showing a sanitary rural school has the latest type school building constructed. Attention is paid to the source of water supply, the method of disposal of excreta, prevention of fly and mosquito breeding, and provision is made for intelligent direction of the energies of the children by providing playgrounds and school gardens.

MENTAL HYGIENE.

A series of charts has been furnished by the officer of the Public Health Service serving with the Society for the Study and Prevention of Mental Diseases. These charts show the prevalence of insanity in the United States, the cost of the care of the insane, the proper treatment and environment that should be given to dependents of this class, and other striking facts in connection with the increase of insanity.

WATER.

(a) Recent studies have shown that the degree of infection of water can be quite closely determined by microscopic examination of water to determine the nature of the minute animal and vegetable organisms found therein. Twenty-four blown glass models illustrating these various minute forms of animal and vegetable life have been made by an expert glass blower. These models are displayed in a glass case, arranged in three series. One series of organisms are found only in highly polluted water. Another series are found only in water showing a moderate degree of pollution, and the third series of models are of organisms found only in clean water. These organisms are displayed in their natural colors, and this exhibit is very beautiful from an artistic standpoint. At the same time it gives accurate scientific data relative to these minute organisms, which are becoming of great interest to sanitarians.

(b) Emergency Hypochlorite Plant for Water Disinfection. This is an actual working plant, constructed of material available in any community

upon short notice. It consists of a series of barrels in which the hypochlorite of lime is mixed with the water and introduced into the water system by an automatic regulator which can be set to give the desired amount of disinfectant required according to the local conditions.

(c) A Traveling Water Analysis Laboratory. This is a compact, complete, portable laboratory designed by the Minnesota State Board of Health officials and used by them in connection with the examination of sources from which water is obtained by common carriers for passengers in interstate traffic.

(d) Maps and charts showing how cholera, dysentery, and other diseases, are spread by polluted water.

SEWAGE TREATMENT AND DISPOSAL OF EXCRETA.

(a) Sewage Treatment Plant. This model is comprised of (1) a diversion "manhole," (2) an Imhoff tank, (3) a dosing chamber, and (4) a sand filter. The sewage from the house or houses first passes into the diversion manhole, where it can be either sent through the Imhoff tank or diverted when repairs are necessary. When the sewage passes through the Imhoff tank it takes out the solids which float and holds such solids until they decompose into unobjectionable sludge. The sewage then passes into the dosing chamber, so that its flow to the sand filter may be regulated. The digested sewage passes through the sand filter free from all objectionable odors and disease-producing bacteria. When the sewage leaves the filter tank it is quite clear and of an attractive appearance.

(b) A sectional model of a special type privy, known as the L. R. S. privy, for use in connection with suburban and country homes.

(c) Another sectional model showing how an L. R. S. privy might be permanently installed by constructing the receiving and discharging tanks of concrete.

(d) Model of a sanitary privy of a design approved by the U. S. Public Health Service for installation in rural communities.

(e) Model of a special design of sanitary pail. This pail is recommended for use in small villages where night soil is collected and disposed of.

WORKING MODEL BOARD OF HEALTH LABORATORY.

One of the most interesting features of the Public Health Service exhibit is an actual working laboratory, fully equipped with all modern apparatus, such as incubators, sterilizers, electric centrifuges, microtomes, microscopes, etc. A competent bacteriologist will carry on actual laboratory procedures, such as examinations of water, performing Wassermann reactions, making cultures for diphtheria or typhoid fever, and such other work as is usually done by a board of health laboratory. Demonstrating microscopes will be used in order to show visiting physicians and health officers various parasites and other specimens in which they may be interested.

MOVING PICTURES.

The manager of the moving picture division of the Government Exhibit Board has had films made showing the work of the Public Health

Service at Ellis Island in inspecting immigrants. The work of the Hygienic Laboratory, Washington, D. C., is also exhibited as a two-reel feature. Another film of moving pictures shows the work of the U. S. Public Health Service in the eradication and treatment of trachoma in certain sections of the mountainous part of the United States. Other films will show the work of the Service in ground squirrel eradication in California, the inspection of vessels at national quarantine stations, and such other features of the work as can be presented in an interesting manner by the use of motion picture films.

In addition to the above, a Health Officer's library is a part of the office equipment of the Public Health Service exhibit. Books for this purpose could not be purchased from the exhibit fund, owing to its limitations, but publishers gladly donated volumes for this purpose.

Photographs will be made of all the various models, charts, maps, and other features of the exhibit, and a Service bulletin will be issued describing in detail everything shown, giving all the reading matter displayed on the descriptive labels.

This Bulletin will not be available for distribution until during the latter part of the Exposition period.

Senior Surgeon C. C. Pierce is in charge of the Public Health Service exhibit. He was one of the medical officers of the Panama Canal, devoting ten years to that work. Dr. Pierce is also the chief sanitary officer for the Panama-Pacific International Exposition, being in charge of the sanitation of the grounds and buildings and the preservation of the health of the thousands of employees.

MORE OR LESS MEDICAL BILLS.

The following list shows the action upon various medical and public health bills by the last legislature, and their status at the time of writing. Some corrections and further notice of the action of the Governor will appear later:

Bills Relating to Public Health Matters Introduced by the State Board of Health at the Forty-First Session of the California Legislature.

A. B. S. B.	Description and Result.
846 796	Amend Cold Storage Act. Passed to Governor.
1046	Amend Sect. 9 and 22 Pure Food Act. Approved by Governor.
1048	Amend Sect. 21 Pure Food Act. Approved by Governor.
47 616	Amend Food Sanitation Act. Held in Senate P. H. & Q.
932 821	Nurses' Registration Act. Passed to Governor.
988 838	Sanitary Engineering Dept. Passed to Governor.
440 95	Increase Salary Sec'y. B. of H. Passed to Governor.
597	Contagious Disease Act (App. \$50,000). Passed to Governor.
718 758	Ophthalmia Neonatorum (App. \$3,000). Passed to Governor.
757 585	Abolishing Statutory Position. Held in Assembly P. H. & Q.
90 656	An Act to Allow Pest Houses in City Limits. Held in Assembly P. H. & Q.

Endorsed by State Board of Health.

446 148	Tuberculosis Bureau (App. \$75,000). Passed to Governor.
---------	--

Bills Introduced at the Forty-First Session of the California State Legislature in Re Practice of the Healing Art, Etc.

(Not Introduced by State Board of Health.)

A. B. S. B.	Description and Result.
102	An Act providing for the admission of humane officers to places where experiments are performed upon living animals. Passed to Governor.
109	An Act to insure the better education of practitioners of dental surgery. Refused passage.
276	An Act relating to granting of certificates to practice medicine and surgery. Held on third reading file, Senate.
310	An Act for the regulation of the practice of drugless system or treating sick or afflicted human beings. Refused passage in Senate.
339	An Act to insure the better education of dental surgeons, etc. Passed to Governor.
544 443	An Act to regulate the examination of applicants for license to treat diseases. Approved by Governor.
611 482	An Act to create the office of dental surgeon. Held on third reading file, Assembly.
770 708	An Act to regulate the practice of pharmacy and the appointment of a Board to be known as the California State Board of Pharmacy. Passed to Governor.
834	An Act to regulate the practice of pharmacy and to provide for the appointment of a Board to be known as the California State Board of Pharmacy. Held in Com. P. H. & Q.
252	An Act for the regulation of the practice of drugless system or method of treating sick or afflicted human beings. Held on third reading file, Assembly.
256 1078	An Act authorizing and regulating the practice of chiropractic, etc. Passage refused in Senate.
640	An Act to regulate the examination of applicants for license and the practice of those licensed to treat diseases, injuries, etc., of human beings. On second reading file, Assembly.
272	An Act relating to the granting of certificates to practice medicine and surgery to graduates from legally chartered or reputable medical schools of the State of California. Held in Com. on M. & D. L.
190	An Act to prohibit the use of arsenic, any alkaloid, cocaine, etc., in the practice of dentistry. Held on third reading file, Assembly.
210	An Act to amend the Penal Code by adding a new section relating to any physician, nurse or other person in attendance upon any person afflicted with contagious or infectious disease. Held on second reading file, Assembly.
1085 827	An Act to regulate the examination of applicants for license and the practice of those licensed to treat diseases, etc., of human beings. On second reading file, Assembly.
1268	An Act to prohibit the exposure of deformed or diseased human beings or parts thereof. In Com. P. H. & Q., Senate.
1357	An Act authorizing and directing the State Board of Health to establish the State Barber Registration and

A. B. S. B.	Description and Result.	A. B. S. B.	Description and Result.
	Sanitation Bureau. Refused passage in Assembly.		vide for inspection, etc. Held in Committee on P. H. & Q.
1407	An Act to regulate the charging or receiving of compensation for treatment of disease. On second reading file, Assembly.	526 410	An Act defining mattresses, prohibiting the use of unsanitary and unhealthy materials therein. Passed to Governor.
428	An Act authorizing and regulating the practice of cosmetic surgery and creating a State Board of Cosmetic Surgery. On second reading file, Assembly.	434	An Act in relation to the suppression and prevention of the spread of contagious and infectious diseases among domestic animals. Held in Committee on Agriculture.
496	An Act prohibiting the advertisement or publication of any advertisement that any person will cure or treat venereal disease, etc. Passed to Governor.	593 500	An Act to regulate the examination of applicants to treat disease, injuries, etc., of human beings. Withdrawn by author.
497	An Act to amend Section 274 of the Penal Code relating to administering drugs, etc., with intent to produce miscarriage. Passed to Governor.	511	An Act to provide for the registration of births, deaths, etc. Passed to Governor.
523 434	An Act to revise the law in relation to the suppression and prevention of the spread of contagious and infectious diseases in domestic animals. On second reading file, Assembly.	558	An Act relating to the Constitution of the State Board of Health. Passed to Governor.
632	An Act to regulate the practice of pharmacy in the State of California. Second reading file, Assembly.	585	An Act relating to the office of the State Registrar of the Bureau of Vital Statistics and State Board of Health. Held in Committee on P. H. & Q.
641	An Act to regulate the examination of applicants for license to treat diseases, injuries, etc., of human beings. Held in Com. on M. & D. L.	732	An Act to regulate the building and occupancy of hotels and lodging houses. Held in Committee on P. & Q.
642	An Act to regulate the examination of applicants to treat diseases, etc., of human beings. Held on second reading file, Assembly.	755	An Act relating to the pollution of streams and public waters. Passed to Governor.
1419	An Act to provide for the establishment and maintenance of a Bureau of Dental Sanitation under the direction of the State Board of Health. Passage refused in Assembly.	923 798	An Act providing for the organization of the State Board of Health. Held in Committee on P. H. & Q.
Bills Relating to Public Health Matters Introduced at the Forty-First Session of the California Legislature.		858	An Act relating to keeping perishable foods in cold storage. Held in Committee on P. H. & Q.
(Not Introduced by State Board of Health.)		639 915	An Act relating to nuisances and their abatement and conferring certain powers upon the State Board of Health. Held in Committee on P. H. & Q.
14 10	An Act to protect the health of persons handling Portland Cement. Refused passage in Assembly.	948	An Act for the prevention of blindness in the newly born. Held in Committee on P. H. & Q.
32	An Act to amend the Civil Code relating to the furnishing of water for family use. Held in P. H. & Q. Committee.	960	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Approved by Governor.
34	An Act to provide for the establishment of Sanatoria, Farm Colonies, etc., for the treatment of tuberculosis. Held in Committee on Finance.	993	An Act to regulate the sale of impure and unwholesome milk. Withdrawn by author.
39	An Act to require physical culture and health development in public schools. Held in Committee on Education.	999	An Act to regulate the retinting and repapering of any house or building which is occupied by human beings. Held in Committee on P. H. & Q.
61	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Held in Committee on Agriculture.	1029	An Act to prohibit the contamination of streams, etc., by the discharge and flow of petroleum. Held in Committee on Oil Industry.
76	An Act to regulate the building of tenement houses in cities and towns. Held in Committee on P. H. & Q.	1267 1138	An Act to regulate the building and occupancy of dwelling houses. Withdrawn by author.
123	An Act authorizing municipal corporations to permit other municipal corporations to construct and maintain sewers, water mains. Approved by Governor.	1165	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Held in Committee on P. H. & Q.
403 342	An Act to establish a State Board of Embalmers, etc. Approved by Governor.	1175	An Act to regulate the sale of butter that has been shipped into the State of California from any place outside of the United States. Approved by Governor.
360	An Act directing the State Bureau of Vital Statistics to collect statistics relating to marriage and divorce. Held in Committee on Finance.	1177	An Act to improve the milk and cream supply. Held in Committee on P. H. & Q.
535 409	An Act to regulate bakeries; to pro-	1178	An Act to regulate the building and occupancy of hotels and lodging houses. Held in Committee on P. H. & Q.
		1549 1227	An Act to regulate the sale of impure

A. B. S. B.	Description and Result.	A. B. S. B.	Description and Result.
	and unwholesome milk, to grade milk, to provide rules and regulations therefor. Passed to Governor.	347 655	An Act to provide for branding on the back of all crabs the name of the place where they were caught. Passed to Governor.
1148	An Act to provide for local improvements upon streets, etc., and for the construction of sewers in municipalities. Held in Committee on Mun. Corp.	358	An Act to protect the health of underground workers. Held in Committee on M. & M.
1283 1188	An Act to authorize municipalities to declare noxious or dangerous weeds a nuisance. Passed to Governor.	431	To repeal an Act entitled An Act regulating the cleaning, laundering and sale of wiping rags. Held in Committee on P. H. & Q.
1207	An Act to protect public health from infection caused by exhumation of the remains of deceased persons. Passed to Governor.	453	An Act to amend an Act entitled An Act to regulate the building and occupancy of tenement houses. Held in Committee on Judiciary.
1211	An Act to regulate the sale of impure or unwholesome milk, to grade milk, to establish inspection service. Withdrawn by author.	589 145	An Act to amend Sect. Seven of an Act entitled An Act to regulate the sale of poison. Passed to Governor.
1525 1226	An Act relating to state hospitals for the insane and other incompetent persons. Approved by Governor.	597	An Act to prevent the introduction and provide for the investigation of contagious or infectious diseases and appropriating money for such purposes. Passed to Governor.
1357	An Act authorizing the State Board of Health to establish the State Barber Registration and Sanitation Bureau. Passage refused in Assembly.	633	An Act to amend the Penal Code of the State of California by adding a new section to fix the punishment for fraudulent advertising. Held in Committee on Judiciary.
10	An Act to provide for the establishment, maintenance and control of sanatoria, farm colonies, etc., for the treatment of tuberculosis and making appropriation. Held in Committee on Ways and Means.	696	An Act to promote public health and to prevent fraud or deception in the sale of butter or in the sale of milk or cream intended for butter making. Held in Committee on P. H. & Q.
4	An Act relative to the furnishing of drinking water and individual drinking cups on passenger trains. Held in Committee on Pub. Util.	758	An Act to validate the organization of sanitary districts, etc. Passed to Governor.
14	An Act to protect the health of persons employed in handling Portland cement. Refused passage in Assembly.	959	An Act to amend Section 635 of the Penal Code relating to the pollution of streams, etc. Held in Committee on F. & G.
36	An Act relating to hotels providing for the sanitary method of keeping and handling bed clothes, etc. Approved by Governor.	1077	An Act requiring every packing house, mercantile or manufacturing establishment, etc., to be heated so as to be comfortable. Refused passage in Assembly.
184	An Act to regulate the sale of eggs that have been shipped into the State of California. Passed to Governor.	1162 361	An Act directing the State Bureau of Vital Statistics to collect, compile and present statistics relating to marriage and divorce. Held in Committee on Jud. & Finance.
185	An Act to regulate the sale of food and drink, the ingredients of which are part composed of eggs shipped into the State of California. Passed to Governor.	1299 988	An Act to regulate the building and occupancy of tenement houses. Passed to Governor.
186	An Act to regulate the placing of cards in all packages of food products which are composed in part of eggs into the State of California. Passed to Governor.	1396 1101	An Act to amend Section 2 of an Act to prevent the supply of water dangerous to health for domestic purposes. Passed to Governor.
1475	An Act to establish a standard for evaporated milk and condensed milk. Held in Committee on L. S. & D.	1464 1144	An Act relating to the use of the public waters of the State of California. Held in Committee on Irrigation.
1490	An Act to provide for the indicating of ingredients of dairy products and of the name and address of the manufacturer. Held in Committee on L. S. & D.	1475	An Act to establish a standard for evaporated and condensed milk. Held in Committee on L. S. & D.
1536	An Act to improve the milk and cream supply and to promote sanitary methods in the production and marketing thereof. Held in Committee on L. S. & D.	701	An Act to prevent the manufacture or sale of dairy products from unhealthy animals, or that are produced under unsanitary conditions; to prevent deception or fraud in the production and sale of renovated butter, etc. Passed to Governor.
271	An Act to prevent the sale of dairy products from unhealthy animals and produced under unsanitary conditions. Held in Committee on L. S. & D.	1147	An Act for preventing the manufacture or sale of adulterated foods and liquors. Passed to Governor.
283	An Act to regulate the sale of crabs that have been shipped into the State of California. Held in Committee on F. & G.	1045	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Passed to Governor.
339	An Act to provide for the incorporation and organization of municipal water districts, etc. Held in Committee on Irrigation.	1047	An Act to prevent the manufacture or sale of dairy products from unhealthy animals. Approved by Governor.
		238	An Act to regulate the preparation and sale of pasteurized milk. Held on third reading file.

- A. B. S. B. Description and Result.
- 582 An Act to promote public health; to prevent fraud or deception in the sale of milk intended for butter making. Held in Committee on Agriculture.
- 1565 An Act to provide for the formation, government and operation of mosquito districts and to facilitate the extermination of mosquitoes, flies and other insects. Passed to Governor.
- 1525 1226 An Act to amend Section twenty-one hundred forty-five of the Political Code relating to state hospitals for the insane. Approved by Governor.
- 564 An Act relating to public health and safety and providing for the regulation and inspection of hotels and public lodging houses. Held on third reading file, Assembly.
- 524 403 An Act to require employers to furnish without charge pure drinking water to employees. Passed to Governor.
- 442 An Act to regulate the building and occupancy of hotels and lodging houses. Held on third reading file.
- 33 An Act to require water companies to supply with water the inhabitants of territory for which they have a franchise. Held on third reading file.
- 895 An Act to promote the better education of nurses and limiting the hours of female pupil nurses. Held on third reading file.
- 1185 An Act to provide for work upon streets, etc., and for the construction of sewers within municipalities. Held on third reading file.
- 540 An Act providing a minimum standard of sanitation for all labor camps, etc. Passed to Governor.
- 1174 An Act to regulate the sale of food ingredients which are in part composed of butter shipped into the State of California. Held on third reading file.
- 1176 An Act to regulate the placing of cards in all packages inclosing food products which are in part composed of butter shipped into the State of California from any place outside of the United States. Held on third reading file, Senate.
- 1180 An Act to provide for the division of municipalities into sewer districts. Held on third reading file, Senate.

SOCIETY REPORTS

ALAMEDA COUNTY.

The regular monthly meeting of the Alameda County Medical Association was held at the Hotel Oakland on Tuesday evening, April 20th, 1915.

The meeting was called to order by the President, Dr. Reinle, and the minutes of the two previous meetings were read and approved.

The following program was then presented:

1. A Water-borne Typhoid Fever Epidemic. Dr. W. A. Sawyer.
2. "Little Things in Medicine." Dr. A. L. Cunningham.

Both of these papers were very interesting, Dr. Sawyer's being discussed by Drs. Force, McCleave, Lackey and Archibald, and Dr. Cunningham's by Drs. Chamberlain, L. P. Adams, Emerson, Stratton, Krone, W. A. Clark, and Ringolsky.

Dr. McCleave exhibited a case of Cretinism in a boy about five years of age.

On motion, a committee consisting of Drs. J. N. Force, Romilda Paroni and W. A. Sawyer was

appointed by the President to draw up a set of resolutions of sympathy in regard to the death of Dr. Edith J. Claypole.

The secretary read letters calling attention to the summer session of the Stanford University Medical School, and of the meeting of the 7th Pan-American Medical Congress in San Francisco in June.

There being no further business the meeting adjourned.

ELMER E. BRINCKERHOFF, Sec'y.

FRESNO COUNTY.

The regular May meeting of the Fresno County Society was held in the office of Dr. F. M. Hayden. A good attendance was present to listen to and discuss an excellent paper on The Medical Treatment of Duodenal Ulcer by Dr. Kenneth J. Staniford.

Dr. Audley Sanders of Lemoore, Kings Co., and Dr. John Allen of Raymond, Madera Co., were elected to membership.

CLIFFORD D. SWEET,
Assistant Secretary.

SACRAMENTO COUNTY.

The regular April meeting of the Sacramento Society for Medical Improvement was called to order by Vice-President S. E. Simmons, at the Hotel Sacramento, at 8:45 p. m. April 20th. On account of the rather late start the report of cases was dispensed with, and the society heard a very excellent paper upon Arthritis, given by Dr. Leonard W. Ely, of San Francisco. Following the discussion of the paper Drs. A. B. Diepenbrock and J. C. Cummings were elected to membership. Applications of Drs. Grazer, Dillon, Hale and Zimmerman were read. Adjourned 10:50 p. m.

F. F. GUNDRUM, M.D., Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of April, 1915, the following meetings were held:

Section on Medicine, Tuesday, April 6th.

1. A Clinical Paper on Reflex Symptoms of Gastrointestinal Origin. Harry B. Reynolds.
2. Early Diagnosis of Tabes Dorsalis. W. F. Schaller. Discussed by J. Rosenstirn, H. J. Nichols, K. Pischel and L. Schmitt.
3. Brief Remarks Concerning the Luetin Reaction in Syphilis. Harry E. Alderson. Discussed by H. V. Hoffman.

General Meeting, Tuesday, April 13th.

1. The Legal Relation of Medical Men to Their Patients; with special emphasis on how they must care for the sick in order to prevent the recovery of damages in malpractice suits. H. T. Morrow, Los Angeles, Attorney for the Medical Society, State of California.
2. Remarks of Malpractice Suits in California defended by the State Society; and suggestions from that experience. Philip Mills Jones.

Discussion.

- A. What is the Matter? Harry M. Sherman.
- B. The Case of Malpractice Suits From the Ethical Standpoint. T. W. Huntington.
- C. From the Standpoint of the Medical Expert. G. Franklin Shiels.

Surgical Section, Tuesday, April 20th.

1. Report of Four Cases of Perforation of the Intestine. Gilbert M. Barrett.
2. Recent Advances in the Diagnosis of Ureteral Calculi. Frank Hinman. Discussed by R. L. Rigdon, M. Krotoszyner, W. P. Willard and A. B. Grosse.
3. Torticollis. A. L. Fisher. Discussed by J. T. Watkins, A. S. Keenan and S. Stillman.

Eye, Ear, Nose and Throat Section, Tuesday, April 27th.

1. Demonstration of Cataract Cases Operated by the Smith Intracapsular Method. (Five to six months after operation.) A. S. Green.
2. Demonstration of Cataract Case Operated by the His Method. K. Pischel.
3. Case of Keratoconus. H. Barkan.
4. Congenital Deviation of Septum occluding Posterior Nares. H. McNaught.
5. Report on Forty Operated Antral Cases. H. McNaught.
6. The X-ray Diagnosis in Accessory Sinus Diseases. W. W. Boardman.
7. The Ethmoid and Sphenoid Suppurations. A. J. Houston.
8. The Eye and Orbital Lesions Secondary to Accessory Sinus Diseases. W. F. Blake.
9. Operative Treatment of Frontal Sinus Disease. H. B. Graham. Discussed by C. F. Welty and K. Pischel.

AMERICAN ACADEMY OF MEDICINE.

The sessions of the fortieth annual meeting of the Academy, with the single exception of the social session, which is to be held in the St. Francis Hotel, will be held in rooms to be announced in the Auditorium Hall of the Panama-Pacific Exposition. The first session on Friday afternoon, June 25th, will be devoted to executive business. The evening session, beginning at eight o'clock, will be devoted to the address of the President, Dr. Woods Hutchinson, and the annual address on "The Relation of Medicine to the Peace Movement," by Dr. David Starr Jordan, Chancellor of Leland Stanford University. The scientific sessions will continue through Saturday and Monday, observing the following provisional program, which is still subject to revision:

1. The effects of transportation upon food products.
 - I. Transportation, refrigeration and conservation of poultry and fish products. Mary E. Pennington, Ph.D., Chief of Food Research Laboratory, Department of Agriculture, St. David's, Philadelphia, and Dr. E. D. Clark, Bureau of Chemistry, Department of Agriculture, Washington, D. C.
 - II. Vegetables, fruits, etc. A. V. Stubenrauch, Professor of Pomology, University of California, Berkeley.
2. The control of the preparation and preservation of food products intended for commerce.
 - a. M. Dorset, Chief of the Biochemic Division, Bureau of Animal Industry, Washington, D. C.
 - b. B. F. Ladd, Food Commissioner of North Dakota, Agricultural College, N. D.
3. The economic importance of Federal inspection of meat and meat products destined for commerce.
 - a. W. H. Lipman, M.D., Swift and Company, Chicago.
 - b. Dr. George Deitwig, U. S. Department of Agriculture, Bureau of Animal Industry, Washington, D. C.
4. The power of quarantine in its relationships to commerce. M. W. Glover, M.D., Surgeon, U. S. P. H. S., San Francisco.
5. The prevention of Oriental diseases in the ports of America. Rupert Blue, M.D., Surgeon-General U. S. P. H. S., Washington, D. C.
6. The control of hookworm diseases by the Pacific steamship companies. Herbert Gunn, M.D., San Francisco.
7. Hookworm disease in its relationship to immigration and commerce in the Philippines. Victor G. Heiser, M.D., Director of Health of the Philippine Islands, Manila.
8. The hospital organization of railway systems.

- C. W. Hopkins, M.D., Chief Surgeon, Chicago and Northwestern Railway Co., Chicago.
9. The transmission of typhoid on trains and steamboats. W. C. Rucker, M.D., Assistant Surgeon-General, U. S. P. H. S., Washington, D. C.
10. Transportation of Consumptives. Henry B. Hemenway, M.D., Evanston, Ill.
11. The disease carrier on train and steamboat. W. A. Sawyer, M.D., Director, Hygienic Laboratory, State Board of Health, Berkeley, Cal.
12. The control of sewage upon vessels and railway coaches. Leslie C. Frank, Sanitary Engineer, U. S. P. H. S., Washington, D. C.
13. The transportation of insects with especial reference to disease carriers. Vernon Lyman Kellogg, B.S., M.S., Prof. of Entomology, Leland Stanford University, Cal.
14. The disinfection of Pullman cars. S. H. McNaught, M.D., Chief Surgeon, Colorado and Southern Railway, Denver. (Informal discussion.)
15. The need of medical conquest before the establishment of commerce. Richard P. Strong, M.D., S.D., Prof. of Tropical Medicine, Harvard Medical School, Boston.
16. The relationship of compensation acts to interstate commerce. Christopher Bradley, Esq., San Francisco.
17. The health protection of the sailor in the merchant marine. R. M. Woodward, M.D., Surgeon, U. S. Marine Hospital, San Francisco.
18. A sociologic experiment in the treatment of tuberculous working women. Philip King Brown, M.D., San Francisco.

AMERICAN PROCTOLOGIC SOCIETY.

Seventeenth Annual Meeting, San Francisco, Cal., June 21 and 22, 1915.

Headquarters: St. Francis Hotel.

Place of Meeting: Civic Auditorium.

Monday, June 21, 1915.

Executive Council meets at 11 a. m.

First regular session at 2 p. m.

Annual address of the President—Subject: "Retrospect and Prospect." Louis J. Krouse, Cincinnati, Ohio.

1. A Review of Proctologic Literature for 1914. Samuel T. Earle, Baltimore, Md.
2. Prolapsus Recti and Its Mechanics. Wm. M. Beach, Pittsburgh, Pa.
3. Causes of Dissatisfaction with Hemorrhoidal Operations. Rollin H. Barnes, St. Louis, Mo.
4. Report of a Case of Carcinoma of the Sigmoid; with Stereo-Radiograms. Walter Irwin Le Fevre, Cleveland, Ohio.
5. Emetin Hydrochloride in the Treatment of Amebic Dysentery. Geo. B. Evans, Dayton, Ohio.
6. Cases of Anal Tuberculosis Treated with Radium. Frank C. Yeomans, N. Y. City, N. Y.
7. Congenital Dilatation of the Colon. Louis J. Hirschman, Detroit, Mich.
8. The Importance of Position in Examination, Operation and Treatment of Rectal Diseases. Granville S. Hanes, Louisville, Ky.
9. Which is the Best Anesthesia to be Used in Anal and Rectal Surgery. Wm. H. Kiger, Los Angeles, Cal.
10. Further Observation on the Treatment of Pruritis Ani by Autogenous Vaccines. Dwight H. Murray, Syracuse, N. Y.

11. Peritoneal Adhesions and Their Relation to Intestinal Stasis.
Jas. A. MacMillan, Detroit, Mich.
12. Constipation: Its Treatment.
Lewis H. Adler, Jr., Philadelphia, Pa.
13. The Ultimate Nervous Results of Acute Angulation of the Sigmoid with Consequent Fecal Stasis.
W. H. Axtell, Bellingham, Wash.
14. Rectal Ulceration in Pellagra.
J. Coles Brick, Philadelphia, Pa.
15. (a) Fecal Abscess in Pouch of Douglas, Following Typhoid: Report of Case.
(b) Ischiorectal Abscess in Nine Day Old Infant. Report of Case.
Alfred J. Zobel, San Francisco, Cal.

CLIMATOLOGICAL ASSOCIATION.

The American Climatological and Clinical Association will hold its annual meeting in San Francisco on June 18th and 19th in a private room at the Clift Hotel which will also be the headquarters of the Society. The National Tuberculosis Society and any members of the medical profession interested in the special work of the Society are invited to attend its meetings.

Very truly yours,

PHILIP KING BROWN,
Chairman on Committee of Arrangements.

THE SEVENTH PAN-AMERICAN CONGRESS.

The National Executive Committee of the Seventh Pan-American Medical Congress, which will be held in San Francisco on the seventeenth, eighteenth and nineteenth of June, 1915, in the Exposition Memorial Auditorium, invites all interested to attend and take part in the proceedings. Registration may be made in advance by addressing Dr. H. P. Newman, 501 Timken Building, San Diego, or at the Registration Bureaus, Palace Hotel and Auditorium, at the time of the Congress. Registration fee \$5.00.

The local committee of arrangements announces adequate scientific and social entertainment, of which detailed notice will be given to all registering. Any information may be had of the local committee, Harry M. Sherman, chairman.

NEVADA STATE MEDICAL ASSOCIATION.

M. A. ROBISON, SECRETARY-TREASURER, RENO.

Officers and Committees for 1915:

President, P. J. Mangan, Winnemucca; Vice-President, J. C. Ferrell, Fallon; Second Vice-President, Arthur J. Hood, Elko; Secretary-Treasurer, M. A. Robison, Reno; Trustees—1 year, C. E. Secor, Tuscarora; 2 years, C. W. West, Elko; 3 years, R. St. Clair, Reno.

Committees:

Membership—P. J. Mangan, J. C. Ferrell, M. A. Robison.

Judicial—J. E. Pickard, F. M. Nesmith, C. E. Earley.

Scientific Work and Program—B. F. Cunningham, R. St. Clair, W. L. Samuels.

Necrology—H. Ostroff, F. M. Wast, E. T. Krebs.

Entertainment—W. L. Samuels, J. A. Asher, R. K. Hartzell.

Delegate to A. M. A.—M. R. Walker; Alternate, A. P. Lewis.

Public Health—M. R. Walker, F. F. Owens, J. L. Robinson.

State Organizer—H. A. Brown.

Council—A. C. Olmstead, J. A. Russell, D. A. Turner, C. E. Bulette, G. M. Gardner, F. C. Pache, A. McIntyre, G. L. Belanger, C. E. Swezey.

LELAND STANFORD JUNIOR UNIVERSITY SCHOOL OF MEDICINE.

To the State Journal of Medicine:

Gentlemen: The following appointments and promotions in the Stanford University Medical School have been made for the year 1915-16:

Dr. Charles Harvey Bailey, formerly connected with the Crocker Research Laboratory, New York City, has been made Assistant Professor of Pathology.

Dr. Henry Augustus Stephenson, formerly Assistant in Obstetrics and Gynecology in the Johns Hopkins Medical School, has been made Assistant Professor of Obstetrics and Gynecology.

Dr. George De Forest Barnett (M. D., Stanford, 1913) and Dr. Jean Redman Oliver (M. D., Stanford, 1914), have been made Instructor in Medicine and Instructor in Pathology, respectively.

Dr. George Dunlap Lyman (M. D., Columbia, 1909), has been made Clinical Instructor in Pediatrics.

Dr. Shadworth Oldham Beasley has been made Clinical Instructor in Obstetrics and Gynecology.

Dr. Hans Barkan has been made Clinical Instructor in Surgery, assigned to Ophthalmology.

Dr. Harvard Y. McNaught has been made Clinical Instructor in Surgery, assigned to Otology, Rhinology and Laryngology.

Dr. Shadworth O. Beasley, Clinical Instructor in Obstetrics and Gynecology, has accepted an appointment as Assistant Surgeon in the American Red Cross Service and has been assigned to Belgrade, Servia.

Very truly yours,
R. L. WILBUR.

NOTICE.

Tacoma, Washington, May 17, 1915.

Chairman Sub-Committee on Transportation A. M. A. Meeting in San Francisco.

Dear Sir:

The members of the Pierce County Medical Society extend a cordial invitation to A. M. A. members attending the San Francisco meeting in special trains or special cars to stop over in Tacoma either coming to or going from San Francisco; if a few days' notice is given we will be glad to take our visitors for a short launch trip on Puget Sound to Point Defiance where a picnic lunch will be served; for those who do not care for the water trip automobile rides about the city and to the park—for the same luncheon.

If word is sent in advance, arrangements and reservations can be made for those who wish to take the trip, either by rail or automobile, to the Ranier National Park and Mt. Tacoma; the railway fare is \$5.00, or if preferred to make the trip by automobile, the round trip rates are \$6.00 to the inn, \$7.00 to the foot of the glacier, and \$8.00 to Paradise Valley, i. e., the line of perpetual snow. The trip by train takes a part of each of two days; by automobile round trip can easily be made in one day and it is well worth while.

Yours truly,
JAMES R. YOCOM,
Chairman Committee on A. M. A. Entertainment, Tacoma, Wash.

BOOK REVIEWS

An Epitome of Pediatrics. By Henry Enos Tuley, A. B., M. D., Late Professor of Obstetrics, Medical Department, University of Louisville; Editor Louisville Monthly Journal of Medicine

and Surgery; Late Chairman of Section Diseases of Children, American Medical Association; Ex-President American Association Medical Milk Commissions, etc. New (2d) edition, revised and enlarged. 12mo, 324 pages. Cloth, \$1.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914. (Lea's Series of Medical Epitomes.)

This small book is one of a series of medical epitomes gotten out by Lea & Febiger. Personally, the reviewer is very much opposed to this type of book in medicine, especially for the student, as it encourages the so-called system of cramming rather than that of careful reading. From the standpoint of the practitioner, however, there may be an excuse for such a book for rapid reference to a subject. There is, of course, nothing new nor original in the book, the author distinctly says it is an epitome and not a text book, and within these limits the author has handled his material well. It would seem that if references to the articles which cover various subjects thoroughly could have been given it would have increased the value of the book considerably. It can only be recommended as a short cut to knowledge and such things are dangerous unless they are in the right hands. In the right hands they may have some value.

W. P. L.

Child Training as an Exact Science. By George W. Jacoby, M. D. With full bibliography and thorough index. 384 pages, 15 full-page illustrations. \$1.50 net; by mail, \$1.62. Funk and Wagnalls Company, Publishers, New York.

This treatise, which is based on the principles of modern psychology, both normal and abnormal, should be read by everyone interested in modern conceptions of the mental development of the child. We are rapidly getting away from the stereotyped principle in pedagogy of treating all children alike. The variability of the individual child is becoming an important feature in pedagogy as well as medicine. Jacoby is well qualified to bring forward not only the psychological but also the pedagogical development of children.

After giving a short historical survey in which fitting tribute is paid to Edouard Seguin and Mme. Montessori, he gives a short résumé of modern principles: the development of the brain and the central nervous system of the child. After dealing with the mental capacity for development as demonstrated by experimental psychology, he goes on to the organic defects or psychic abnormalities of childhood, then to the functional disorders, and finally concludes with the principles underlying therapeutic training of the child. The following quotation from his conclusion very well represents the fair mindedness with which he has developed the subject of child training: "The present day development of pedagogy, as well as of medicine and other sciences, has shown that nothing is so difficult as to free ourselves from the prejudices which obscure our vision and give all our observations a false aspect." This is a book which should be read by every parent, teacher and physician.

W. P. L.

Abdominal Operations. By Sir Berkeley Moynihan, M. S. (London) F. R. C. S., Leeds, England. Third edition, entirely reset and enlarged. Two octavo volumes totaling 980 pages, with 371 illustrations, five in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, \$10 net; half morocco, \$13 net.

There are some books which it may be audacious to praise and needless to call to public attention;—one of them is this masterwork of a leader in abdominal surgery.

It is characterized, like others of Moynihan's writings, by brevity, clearness, and precision.

It is complete enough to be a real help, and consistent and apposite enough to make every word of value. It contains not only excellent and well illustrated technical descriptions, but also discussion of the author's views on indications for operation, notes on his cases, and exposition of his clinical ideas. It is necessary for every operating surgeon to have read and studied it; it is not less invaluable to the internist, for, as Osler says, it is largely the surgeons who have made possible modern knowledge of the functions, physiological and pathological, of the digestive tract. And foremost among these pioneers in "The Pathology of the Living" stands Moynihan.

Some of his statements will not be accepted without controversy in America and on the continent. His advocacy of purging (p. 72 and 125, Vol. 1) and "milking" the gut (p. 408, Vol. 1, and p. 105, Vol. 2) in peritonitis, his use of paraffin in the abdomen to avoid adhesions (p. 135, Vol. 1), his statement that in opening the abdomen "muscular fibres are always to be separated, never to be cut" (p. 105, Vol. 1) may be cited as examples. In the chapters on injuries to the solid viscera one misses mention of methods of arresting hemorrhage by tamponade with grafts of fascia, fat or omentum.

The chapters on the stomach, duodenum, and bile passages stand out pre-eminent among the contents of this admirable work.

L. E.

Differential Diagnosis. Presented through an analysis of 317 cases. By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine Harvard Medical School. Octavo of 709 pages, 254 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, \$5.50; half morocco, \$7.00.

The large number for whom Dr. Cabot's Differential Diagnosis has combined to an unusual degree, instruction with fascinating interest, will welcome a second volume on exactly the same plan. As before, various "leading symptoms" as diarrhea, hemoptysis, fainting, etc., have been illustrated by a series of cases from the Massachusetts General Hospital. Each case is carefully described and analyzed, with autopsy or operation reports or other data as to outcome appended. To each chapter is prefaced a general discussion of the symptoms under consideration written in Dr. Cabot's breezy style, and very useful tables as to frequency of the various causes for the condition. This book, like all Dr. Cabot's writings, exhibits his destructive attitude toward grizzled doctrines not sufficiently supported by proof, and as has occurred before, some will take umbrage when their cherished beliefs are thus made light of. As in the previous volume there will be many of the author's opinions and diagnoses to which the reader will not agree, but this very element of uncertainty is the characteristic of medical practice which makes it the most fascinating game there is. If the reader were to draw from the book only the lesson that dogma and certainly are impossible in medical practice, he will be fully repaid. The book is profusely illustrated with diagrams and charts of various kinds.

J. L. W.

Dietetics: or Food in Health and Disease. By William Tibbles, LL.D., M.D., L.R.C.P., M.R.C.S., L. S. A. Medical Officer of Health, Fellow of the Royal Institute of Public Health, etc. Octavo, 627 pages. Cloth, \$4.00 net. Lea & Febiger, publishers, Philadelphia and New York, 1914.

This book dealing with food in health and disease, with the author's previous work on "Foods": their origin, composition and manufacture, forms a complete system of dietetics.

The author calls attention to the great amount

of time given the study of animal and plant foods in all agricultural colleges, whereas the average medical school and the average physician greatly neglect the study, the practical application of which "could benefit 50% of the physicians' clients when they are sick, and is no less important as a branch of preventive medicine."

The book is thoroughly up to date. It adequately covers the question of digestion, absorption and metabolism, as well as the caloric value of foods and the study of food requirements at various ages. The study of the mineral requirements of the human body is also given the consideration it deserves.

Recent work on the enzymes, lipoids, salts and vitamins is discussed, with its importance in the study of the so-called deficiency diseases.

The chapters on diet in disease are not only instructive but stimulating. They are a bit lengthy perhaps, but their contents are all "meat." They give enough physiology, pathology, etc., as to render the discussions on rational treatment very easy to follow.

The book is very well written. The typography is worthy of praise, heavy typing, italics, diagrams and tables being so well distributed as to render reading enjoyable.

References are given, especially to all newer articles so that the book is one that can be well recommended to teachers and students as well as to practitioners.

Diabetes Mellitus. Nellis B. Foster. Lippincott Co., Philadelphia and New York. 1915.

This is a fine book, but that it will be a widely useful one is doubtful. Much the better part is the one concerned with the presentation of a short summary of the present position of experimental research into the metabolic problems of diabetes. It is a very good summary, but so condensed that it will be very difficult reading for anyone not concerned at first hand with these matters. For this reason it will probably not mean much to the type of clinician mentioned in the preface for whom the book is particularly intended, the clinician who does not read journals devoted to physiology and chemistry. On the other hand all clinicians worthy of the name who are specially interested in the treatment of diabetes are obliged to keep posted on experimental work because it often has such a direct relation to the management of their patients. To them the book will be interesting but not indispensable. A much fuller and very able review of the literature has recently been published. It is satisfactory to see that Foster gives short shift to the polyglandular theory of diabetes which has complicated and obscured so many discussions on diabetes. He decides clearly against the possibility of the formation of any considerable amount of sugar from fat. In discussing the subject of acidosis he attributes the discovery that neutralized oxybutyric acid had a considerable toxicity to Ehrmann, but R. L. Wilbur published experiments in this connection some years before Ehrmann's paper appeared. He is very orthodox in his chapter on treatment, but there is a significant footnote in which he states that several years ago he observed a decrease of acidosis with the use of very meager rigid diets, and has employed that method since, "although it is against ideas commonly taught."

T. A.

A Treatise on Diseases of the Rectum and Anus.

Edited by A. B. Cooke, A.M., M.D. Assisted by W. M. Beach, J. C. Brick, G. B. Evans, A. B. Graham, G. S. Hanes, L. J. Krouse, C. F. Martin, F. C. Yeomans, A. J. Zobel. 215 illustrations in the text and 21 full-page plates, 7 in colors, 8 vo. Publisher, F. A. Davis, Philadelphia, 1914. Price, \$5.50, cloth.

Dr. Cooke, assisted by the well-known rectal

surgeons Doctors Beach, Hanes, Evans, Graham, Krouse, Martin, Yeomans, Brick and Zobel, has produced a very readable book that is destined to become very popular with the medical profession. Dr. Cooke has written the first sixteen of the thirty chapters in the book and his collaborators have contributed the remaining fourteen, each writing on a subject to which he has given particular attention or in which he has had special experience: such as the chapter on "Local Anesthesia in Ano-Rectal Surgery" by Dr. Zobel; the chapter on "Relation of Rectal Diseases to General Health" by Dr. Hanes, and the chapter on "Reflexes and Neuroses of the Rectum and Anus" by Dr. Martin—all very excellent.

The chapters by Dr. Cooke are interestingly written and to the point and the subjects generally well handled, though under Prolapse I miss any mention of the method of cure by obliteration of the Pouch of Douglas in women and the corresponding pouch in men, an operation that has been tested and found to fulfil all expectations by Moskowitz of New York.

Taken as a whole Dr. Cooke's book ranks well with any that have appeared in recent years; and despite the number of collaborators, preserves an evenness and harmony that is due to the fact that the contributors are entirely in accord in essential facts, being thoroughly acquainted with each other's work.

A. N.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Volume IV, number II (April, 1915). Octavo of 197 pages, 47 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published bi-monthly. Price per year: Paper, \$8.00; cloth, \$12.00.

Contents.

Murphy's Clinical Talks on Surgical and General Diagnosis.

Bony Lipping of the Right Acetabular Margin and of the Neck of the Femur Following Metastatic Arthritis.—Arthroplasty of the Hip.—Cheilotomy.

Carcinoma of the Breast.

Carcinoma of the Colon.—Diffuse Miliary Carcinosis of the Peritoneum.—Exploratory Operation.

Epithelioma of the Upper Lip Starting in an Old Lupus Scar.—Excision, Plastic Closure.

Intramural Fibroid of the Uterus.—Diagnosis.—Hysterectomy.

Hypertrophy of the Prostate.—Urinary Retention and Self-Catheterization.—Cystitis, Periprostatis, with Multiple Abscess and Fistula Formation.—Perineal Prostatectomy.

Spontaneous Massive Coagulation of Cerebrospinal Fluid with Xanthochromia.—Its Significance in the Diagnosis of Lesions of the Spinal Cord and Its Membranes.

The Tonsils. By Harry A. Barnes, M. D. Published by C. V. Mosby Co., St. Louis. 1914.

This book is the best exposition of the modern thought concerning the tonsils and the tonsillar region that has yet appeared. The author has given a clear-cut, concise view of the embryological development of the tonsils and their pillars, and has been very successful in showing the influence this development has had on the types of tonsils and the pathology of late life. The cuts in the book are well selected and show a great deal of hard research work on the part of the author and his assistants. The short chapter on the relation of the tonsils to systemic infections shows a thorough familiarity with the bacteriology of the subject that has been so thoroughly worked out by modern workers. His operative technic is simple and follows the accepted methods. On the whole, the book reflects a judicial mind free of bias and fadisms and should be well received.

H. B. G.

The Commoner Diseases: Their Causes and Effects.

By Dr. Leonhard Jores, Professor Der Allgemeinen Pathologie Und Pathologischen Anatomie An Der Universität Marburg. Authorized English Translation by William H. Woglom, M.D., Assistant Professor in Columbia University, assigned to cancer research; Assistant Pathologist to St. Luke's Hospital, New York City. Eight Vo. cloth, pp. 424, with 250 figures in the text. Price \$4.00 net. 1915. Publishers J. B. Lippincott Co., Philadelphia and London.

This work consists of a series of lectures delivered by the author to his students. The writer discusses without going into great detail, the etiology, complications and sequelae of the more frequent lesions together with, in most cases, a short description of the macroscopic and microscopic pathology.

Though diseases such as Tuberculosis and Carcinoma are presented more or less fully, an important subject such as Syphilis receives only a very brief outline.

The discussion of the various modern etiologic theories is a commendable feature.

The book is copiously illustrated and furnishes easy reading, especially to the student beginning his pathological studies and desirous of gaining a preliminary outline of the subject. C. S.

Principles of Hygiene: For Students, Physicians, and Health Officers. By D. H. Bergey, M.D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fifth edition thoroughly revised. Octavo of 531 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, \$3.00 net.

This manual has been thoroughly revised according to the advances made in the large number of subjects included in general hygiene. Two distinctive features of the book are the consistent use of the metric system, which to a degree lessens its value as a practical manual designed for students and practitioners of medicine, health officers and architects, since the French system is not in general use amongst these professions; and the inclusion of the Laws Governing Federal Quarantine Regulations and Practice. The author incorporates extracts from the reports of boards of specialists, without explanation or analysis, as in the chapter on Water and Sewage Analysis, in which the subject of the analysis of water and sewage is treated by extracting the report of the Section of Bacteriology and Chemistry of the American Public Health Association. The tabulation on page 376, including the mode of dissemination of scarlet fever and measles by the desquamations is questionable, in the light of recent observations. Several subjects are treated with less degree of thoroughness than is consistent even with a manual, as for example the chapter on soil includes nothing on the subject of soil pollution and hook-worm disease; that on vital causes of disease treats very superficially the prophylaxis of some of the infectious diseases. The value of the book is that of a modern compendium.

N. E. W.

"The Tuberculosis Nurse." Her Function and Qualification. By Ellen N. La Motte, R.N., former Nurse-in-Chief of the Tuberculosis Division, Health Department of Baltimore. Pub. by G. P. Putnam's Sons, N. Y. and London. 1915. Price, \$1.50.

This book is very timely since it brings into concrete form, the work which the visiting nurse has been doing to prevent tuberculosis, and some new suggestions as to what scope her duty in the future should take.

After dwelling in perhaps too great length, upon

the qualifications of the Tuberculosis nurse, the author very ably in several chapters takes up the question of home disinfection and the instruction to the patient in the home. The Tuberculosis Dispensary is given an important place, it being the agent for diagnosis and for putting the nurse in the important position of carrying out the doctor's instructions and working hand in glove with him.

A rather severe stricture is put upon the medical profession, or rather upon the greater portion of it, who handle this disease without sufficient knowledge to properly diagnose it in its incipency, or after diagnosis, to properly instruct the patient in the general tenets of prevention not only so far as he himself is concerned, but in regard to his neighbor and his family. In fact, the author strongly advocates the Municipal control of all cases, not only on account of the nature of the disease, but also because the physician who has the sanction of the State is not always equipped to handle this disease.

Inasmuch as this book takes up practically every phase of the relation of the tuberculosis nurse to the patient, the dispensary, the hospital, the home and the sanitarium, it would be impossible in a short review to analyze it at length. The book seems to be mainly an appeal for the municipal control of tuberculosis and the importance of the tuberculosis nurse in the great movement for the prevention of tuberculosis. The book is radical and will without question meet opposition; but it is carefully prepared and full of suggestions. The author is to be highly commended for bringing this very important subject to the notice of the public and to the medical profession in particular.

W. C. V.

Diseases of the Rectum and Colon. By Jerome M. Lynch, M. D. Published by Lea & Febiger, Philadelphia. 1914. Price \$5.00.

Since Tuttle wrote his classical work on Diseases of the Anus, Rectum, and Pelvic Colon there have been published a number of very good treatises on the subject by various authors. Among the latest is that of Dr. Jerome M. Lynch, Professor of Rectal and Intestinal Surgery in the New York Polyclinic, who for many years was associated with Dr. James P. Tuttle in that institution, and who, upon the latter's death, became his successor.

It has always been greatly regretted by those interested in proctology that Dr. Tuttle's failing health prevented him from revising his book and giving the invaluable experiences of the last few years of his life. It was especially regretted that he did not associate Dr. Lynch with himself in making such a revision.

The advent of a work by Dr. Lynch was therefore looked forward to with much interest, as the conclusion was that it would be one which, taken in connection with Tuttle's, would be the last word on the subject. In this, one is not disappointed. A perusal of the contents shows that Dr. Lynch has been most happily successful in his efforts.

The book is excellently written and gives every evidence of much patient care; is well printed and illustrated, and is devoid of much that the average reader considers only padding of no particular interest except to those especially interested in the subject.

The author has drawn freely upon his large experience in the surgery of the rectum and colon, and has given only that which he has found to be of the most value.

That there is a continually growing interest in the study of diseases of the anus, rectum and colon is evidenced by the fact that within the past few months, besides Lynch's book, there have appeared two others: one by Mr. P. Lockhart Mummery, of London, Eng., and one by Dr. A. B. Cooke, assisted by nine Fellows of the American Proctologic Society.

A. J. Z.

BOOKS FOR SALE.

The following books are for sale by the widow of a recently deceased physician. Address Mrs. H. G. Plymire, 1510 Fifth avenue, Oakland, Calif.:

Medicine, Hare, 3 vols., 1905; Diagnostic Methods, Webster, 1909; Genito-Urinary Diseases, Gaspers, 1909; 12th Edition Therapeutics, Materia Medica, Pharmacy, Potter, 1912; Pathology, Coplin, 1911; Surgery, Spencer & Gask, 1910; Surgery, Binnie, 1911; 2 vols. Urology, Guiteras, 1912; Skin, Jackson, 1899; Surgical Therapeutics, Lanphear, 1907; 10 vols. Practice of Medicine, Series; Othology, Bacon; Hernia, Murry; 2 vols. Medicine, Strumpell, 1911; Anus, Rectum, Pelvic Colon, Tuttle, 1907; Preparatory and After Treatment in Operative Cases, Haubald, 1910; Medicine, 8th edition, Osler, 1912; Obstetrics, Williams; Internal Diseases, Forchheimer 1 vol., 1907; Diagnosis and Treatment of Diseases, Caille, 1905; Internal Medicine, Butler, 1907; Infancy and Childhood, Holt, 1911; Minor Surgery, Foote, 1907; Clinical Symptomatology, Pick, Heck, Koessler, 1911; Chemical and Microscopical Diagnosis, Wood, 1909; Tuberculosis, Klebs, 1909; Vitality, Fasting and Nutrition, Carrington, 1908; 8 vols. Surgery, Bryant and Buck, 1908; 3 vols. Surgical Diagnosis, Johnson, 1909; Modern Clinical Medicine (Appeltons), 4 vols., 1906; Electricity in X-Ray and Therapeutics, Monell, no number; Nervous System, Bailey, 1906; Pathology, Stengel, 1898; Pathology Technique, Mallory and Wright, 1904; Physiology, Foster—very old book; Diseases of Women, Skene, 1897; Gynecology, Kelley, 2 vols., 1908; Forensic Medicine and Toxicology, 1895; Surgery, Park—7—1901; Midwifery, Playfair; Medicine, Osler, 1898; Fractures, Beck; Anatomy, Cunningham, 1905; Hygiene, Rohe; Dermatology, Pusey, 1907; 2 vols. Medicine, Dieulafoy, no date; 4 vols. Internal Diseases, 1914, Billings; Materia Medica, Potter, 1890; Fractures, Scudder, 1901; Obstetrics, King, 1886; Modern Surgery, Acosta, 1898.

Edema and Nephritis. Martin H. Fischer, 1915. John Wiley & Sons, New York.

Fischer is convinced that the living body tissues react to changes in their environment in a manner which is analogous to the behavior of colloids such as fibrin and gelatine. His book is a presentation of this thesis, and the phenomena of edema and nephritis are discussed and explained on the basis of this hypothesis.

The book is cleverly written and would be convincing if all disturbing physiological and pathological facts could be eliminated from the reader's memory. It is stimulating, but probably not in the direction intended. The average reader will not be inclined to follow Fischer's advice to test the validity of his hypothesis by experiments on patients, but he will be stimulated to examine into the basis of his argument. In so far as the book succeeds in accomplishing this, it will have done a service to medicine, for there can be no doubt that colloid phenomena are very important factors in the cell metabolism, factors which have been necessarily neglected in the past because of our want of knowledge of these processes even as they occur outside of the body.

A cursory review of the known facts in colloid chemistry will convince anyone that they lack the simplicity which is apparent in Fischer's presentation of them. It will be found that there are very wide differences in the behavior of the same colloid under the same experimental conditions, and that the greatest difficulty is found in obtaining concordant results. This arises from the instability of colloidal solutions, and makes it very unsafe to generalize. Young (Infection and Resistance, Zinsser 1914) closes a short review of the relation of colloidal phenomena to biological processes with the following remarks: "What is now greatly needed is more data on a greater

variety of colloids than have heretofore been investigated and work directed toward the preparation of colloidal solutions of definite character. Until something has been accomplished in these directions all biological analogies and the like cannot be anything more than qualitative, and the same holds true for many of the physical and chemical conclusions which have been discussed in this chapter."

Fischer in his discussion of theories other than his own shows a great capacity for trenchant criticism, and it is therefore to be regretted that he does not apply the same critical faculty in the interpretation of his own results. A glance through recent literature will show that those who are engaged in experiments similar to those he details are much more conservative than he is in drawing analogies. The following conclusions are taken from three recent papers. It is to be noted that these workers are fully in sympathy with Fischer's endeavor to apply the facts of colloid chemistry in the interpretation of biological processes.

Ehrenberg (Arch. f. die ges. Physiol., 1913, 153, 1), concludes that when living muscle tissue is immersed in various salt solutions, the changes can be explained on osmotic but not on colloidal principles. It is only when the tissue dies that it behaves like a colloid. Kidney tissue changes under the same conditions cannot be explained fully either on a purely osmotic or on a purely colloidal hypothesis. It is necessary to assume a "Tätigkeit" in regard to the mechanism of which we as yet know nothing.

Siebeck (Arch. f. die ges. Physiol., 1912, 148, 443), finds that qualitatively living kidney tissue in various salt solutions acts as does an osmotic cell, but the changes are not quantitatively the same, for the changes produced are only about one-fourth the magnitude of those occurring in an osmotic cell. He finds that changes in reaction have no effect on the kidney while it is alive, but when it is dead the tissue alters in weight in acid and alkaline solutions independently of the osmotic pressure. Finally, he concludes that no analogy is possible between colloid phenomena and the behavior of living kidney tissue, and he cites experiments which directly controvert those of Fischer's.

Hess and Müller (Zeit. f. exper. Path. u. Ther., 1914, 17, 59), say: "Wenn Martin Fischer's geistvoller Versuch, die ganze Oedemfrage von einer ähnlichen Gesichtspunkte aus schematisch zu lösen, als gescheitert angesehen werden wird, so weisen doch seine und Reichardt's Untersuchungen einen neuen Weg, der gangbar und hoffnungsvoll erscheint."

It is noteworthy that the first two authors definitely conclude that the reactions of dead tissue are qualitatively as well as quantitatively different from those of living tissue. This goes to the root of the whole question, and stands in direct opposition to Fischer's method of arguing from the behavior of gelatine plates and solutions of powdered fibrin, that similar changes occur in the body. Fischer rather contemptuously rejects the possibility of there being any such qualitative difference, without however giving any satisfactory reason.

So much for the theoretical basis of the book. The practical application to the problems of edema and nephritis is very interesting and full of statements which call for criticism, but in order to make this review of reasonable length we shall confine ourselves to Fischer's discussion of nephritis.

Nephritis, he says, is caused by "the abnormal production or accumulation of acid and of substances which in their action upon colloids behave like acid, in the cells of the kidney."

The first evidence he brings forward in support of this statement is the supposed fact that the urine is abnormally acid in nephritis. He

quotes a few estimations of Höber as his authority for this, and refers vaguely to "the scores" (of acidity estimations) "that may be found in any of the larger monographs on nephritis." But as a matter of fact there are no reliable data on the acidity of the urine in nephritis. It must be remembered that it would be just as inaccurate to draw conclusions from the acidity of the urine unless the dietary conditions were known, as it would be to attempt to judge the rate of protein metabolism without knowing the amount of nitrogenous food taken. It is not by any means certain that the urine is unusually acid in nephritis. The reviewer has at present under observation two cases of glomerular nephritis, who excrete a urine neutral to litmus, when on a diet which gives rise to an acid urine with normal people. And this is what might reasonably be expected in any severe kidney lesion, since the secretion of an acid urine from neutral blood is due to work on the part of the kidney, which it may not be able to accomplish when diseased.

Fischer makes a good deal of the value of changes in the acidity of the urine as a guide to diagnosis and prognosis in nephritis. So it is all the more remarkable that in the twenty clinical cases of nephritis presented that the acidity of the urine is mentioned in only four and then in the most perfunctory manner and with no details as to the diet, or even as to whether the specimen examined was from a 24-hours' collection or not. The urine is said to be "acid," "intensely acid," or "acid to paranitrophenol" before treatment by alkalis, while one case is detailed in whom the urine was acid to methylorange after sodium carbonate had been injected intravenously.

A second point brought forward to support the conception of nephritis as due to increased acidity is the high absolute and relative amount of ammonia in the urine. He states that in generalized nephritis the ammonia will amount to 2, 3, or even 4 grams a day (p. 643). This statement is interesting because it is at complete variance with the facts as given by others, and it is unfortunate that no details of the cases and no other facts of any description are given. Until such details are forthcoming we must continue to believe that in nephritis there is no increase in ammonia excretion.

Von Noorden in *Metabolism and Practical Medicine*, vol. II, p. 449, in reviewing the literature on this point says: "The subjects of renal disease excrete small quantities of ammonia" (on a diet poor in protein) "and on a varied dietary normal quantities of ammonia." "This is equally true of all forms of nephritis."

The third point is that all these conditions which are known to produce nephritis or at least albuminuria, such as interference with the circulation of the kidney, uranium, lead, etc., do so because they lead to the production of acid in the kidney or in the body. This seems, however, to be a mere assumption. If an albuminuria is produced by clamping the renal artery, it would seem rather begging the question to suppose that the acids, if any, produced under these conditions are the direct cause. There are many other possible disturbances in cell metabolism which might be responsible.

Fischer then deals with the question of albuminuria and comes to the conclusion that the albumen in the urine is derived from the solution of the kidney tissue protein, apparently mainly because fibrin will dissolve in acid solutions. It may be stated in passing that it must be obvious to Fischer that the concentration of H ions used in these experiments is enormously greater than any which can exist in the body fluids. But this does not deter him from drawing an analogy between fibrin solution in hydrochloric acid and albuminuria in nephritis, and then tacitly arguing back and implying that because of the fact that

there is an albuminuria, there must be an acidosis in the kidney. He then closes the argument by a discussion of the morphological changes in nephritis, which he considers may be reproduced by the action of acids on kidney tissue.

In the next section he takes up the "alleged consequences of kidney disease," and there is much that is sensible and to the point in his discussion of the relation of vascular disease to nephritis, but here again he shows a want of balance, and a tendency to neglect to mention facts which do not fit into his scheme. He states, for instance, very dogmatically that reduction in the amount of kidney tissue does not induce cardiac hypertrophy, and he shows photographs of animals who have had all but $\frac{1}{4}$ to $\frac{1}{8}$ of their kidney tissue removed. But how are we to tell whether their hearts are hypertrophied or not? Certainly not from the photographs. Has Fischer never heard of the analogous experiments of Heinike and Passler, who produced cardiac hypertrophy in this way?

Uremia is very simply explained by Fischer. It seems perfectly obvious to him that it is only an edema of the central nervous system produced by the swelling of the colloids under the influence of acids. It has nothing to do directly with nephritis. In the uremia of so-called chronic interstitial nephritis there is no kidney insufficiency. It is due to acidosis of the brain from insufficient oxygen supply because of vascular disease. The defective elimination of phenol sulphurphthalein in this type of uremia is easily passed by with the remark that this requires to be "restudied." The accumulation of non-protein nitrogen in the blood does not seem to be sufficiently important for mention.

There is a short historical review of theories of kidney secretion. Even at the risk of seeming hypercritical, it is worth while to remark that it is not justifiable to couple Bowman's name with Ludwig's as jointly responsible for the filtration theory. This is not a serious error because it is so obvious, but close to it on p. 507 and p. 508 is a more subtle but dangerous mistake, since it amounts to a misrepresentation of some very important work.

Fischer says: "To render secretion possible we must first of all supply the kidney with oxygen. In the process of water secretion by the kidney the oxygen is not only used up but carbonic acid is produced, and the loss of one and the production of the other run the higher, the greater the amount of water secreted by the kidney." He refers to the work of Barcroft and Brodie in making this statement. The impression left on the mind is that the secretion of water is accomplished by means of work on the part of the kidney, and this implication supports Fischer's theory of the primary importance of water excretion, the excretion of solid substances being nearly secondary. On this, in part, he bases his preference of the diuresis following the administration of water as a test of kidney function, and his statement that no insufficiency of function is possible while water excretion is intact (p. 628).

But if the two papers he refers to are consulted it will be found that Barcroft and Brodie find that, though diuresis is accompanied by an increase in oxygen consumption, there is no direct proportion between the oxygen used up and the amount of urine excreted, and in the second paper that the diuresis produced by urea and sodium sulphate is accompanied by a great increase in oxygen consumption.

Fischer's presentation of the essence of this work is not justified by the papers he quotes and is in direct contradiction to the further development of research along these lines. Later it was shown very clearly that it was possible to obtain a great increase in water excretion by the kidney by sodium chloride injections, without any increased

consumption of oxygen, whereas a much smaller increase of urine caused by urea or sodium sulphate produced a great increase in the amount of oxygen used. The excretion of a watery urine isotonic with the blood is not associated with evidences of chemical work.

It is very much to be hoped that in future editions this false impression of the results of Barcroft's work be corrected, since they form, as Fischer himself says, one of the "few experimentally well-established facts" on this subject. In Section IX Fischer enters on the "experimental foundations for the treatment of nephritis." These consist of experiments which are believed to show that the injection of hypertonic sodium chloride solution, or mixtures of various salts in greater concentration than they occur in the blood, is beneficial in nephritis. He shows that the albuminuria and cylinduria which appears when rabbits are tied "snugly" into a holder, or when acid is injected into the blood, or when the renal vessels are temporarily closed, disappears or diminishes when salt solution is injected.

But this "foundation" does not seem to be very firm. By means of the hypertonic salt solution a very pronounced diuresis is produced, and the volume of the urine increases to more than ten times its previous level. Of course the intensity of qualitative albumen tests diminishes and casts become difficult to find. It may be further noted that in the so-called "asphyxial nephritis" produced by tying rabbits on to a holder, all the controls recovered, while of the four injected with salt one died, and that both the animals, into whom salt as well as acid were injected, died. This does not seem a very good foundation for a proposed method of treatment.

In the following section he proceeds to the treatment of nephritis. As regards diet he says: "Practically expressed, I let the nephritic eat pretty much as he pleases." He gives enough alkali to keep the urine neutral to litmus, plenty of salt, and plenty of water. In severe cases he advises the intravenous injection of a solution of sodium carbonate and sodium chloride.

It is to be hoped that no clinician will be so carried away by the brilliancy of Fischer's arguments that he will apply his methods to the usual cases of nephritis he meets in his practice. He should remember that Fischer does not believe that a patient with uremia arising during the course of a chronic kidney disease associated with high blood pressure is suffering primarily from kidney insufficiency. Apparently in such cases he does not recommend intravenous alkaline injections, for there is no such case mentioned among his clinical cases, although it is difficult to understand why not, for he says that uremia also is due to acid accumulation.

The best advice that can be given anyone who feels tempted to try Fischer's treatment is to read carefully and critically the case reports he cites. He will find two cases of post-operative anuria, three cases of apparently acute nephritis, two cases diagnosed as chronic parenchymatous nephritis, one obscure case (No. 26) in which no diagnosis seems possible from the facts given, and ten cases of albuminuria and cylinduria associated with pregnancy. One other case diagnosed as one of the "acute nephritis," in which death followed an intravenous injection of hypertonic salt solution and sodium carbonate, is given. A post-mortem examination was obtained and the following description of the condition found in the kidneys is characteristic of the character of these reports: "The kidneys were somewhat swollen and of good color. The capsules stripped easily!"

It is surely within the bounds of moderation to say that such vague and slipshod summaries as are presented here are far from convincing. The mere fact that a diuresis may be induced in some patients who have albumen and casts in their urine by in-

travenous injection of hypertonic salt solutions, is no proof that they were necessarily benefited thereby. Nor is the decrease in the intensity of albumen reactions and in the number of casts remarkable when the urine becomes very dilute. The subsequent recovery which occurred is frequently seen without any such treatment. It is possible he is right that in an acute nephritis such treatment is beneficial; but the better way to settle the question would surely be to produce an acute experimental nephritis in animals by uranium, for instance, which he specifically mentions as acting by leading to an acid accumulation in the kidneys, and to try the effect of his injections on them. He could then bring forward objective proof of the presence of an acute kidney lesion, and leave no doubt in his reader's mind as to the accuracy of his diagnosis, a doubt which certainly remains after reading his clinical reports.

If this book were not clever and interesting, if it did not contain many sound and true remarks, it would not be worth reviewing. It is because it is presented in such a forcible and compelling manner that it requires close criticism. It has all the charm of the new and unorthodox, but the new is not always true, and facts, however old, are still facts.

THOMAS ADDIS.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Standard Radium Solution for Bathing.—A 5.2 per cent. barium chloride solution containing radium chloride equivalent to 4.2 micrograms of radium per bottle. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. The barium in the solution is said to have no effect. The contents of a bottle, containing 4.2 microcuries or 10,000 Mache units are used for a bath. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Standard Radium Solution for Drinking.—A solution of 2 micrograms of radium and 1.3 mg. barium chloride per bottle of 60 c.c. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. In view of the small barium content, it is claimed that the physiologic action of barium may be ignored. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Standard Radium Earth.—A mixture consisting chiefly of silica and small quantities of carnotite, 450 gm. containing 0.45 micrograms of radium in the form of radium sulphate. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. For use the earth is mixed with water and heated for a time. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Standard Radium Compress.—A compress containing 225 gm. of a mixture consisting chiefly of silica and barium sulphate containing radium sulphate equivalent to 15 micrograms of radium. For "Actions and Uses" see the article in New

and Nonofficial Remedies on radium. Being applied wet, it is claimed that the action is partly due to beta and gamma radiation of the radium salt and partly to the radium emanation which is dissolved out by the water. The Radium Chemical Co., Pittsburgh, Pa. (Jour. A. M. A., April 17, 1915, p. 1325).

Items of Interest.

The Quality of Bland's Pills.—An examination of the various brands of Bland's Pills supplied by manufacturing houses, made in the A. M. A. Laboratory, refutes the commonly assumed instability of ready made Bland's pills. On the other hand it is shown that the Bland's pills on the market are not very reliable as to the amount of iron present, the variation ranging from 77 to 183.2 per cent. of the claimed amount of ferrous carbonate. The different brands also differed widely in their ease of disintegration. The special forms, such as the "nascent" preparations, the "soft mass" pills and the gelatin encapsulated oil suspension, sold as "Frosst's Bland Capsules," showed no advantage over the ordinary kind (Jour. A. M. A., April 17, 1915, p. 1344).

Lactobacilline Omitted from N. N. R.—The Franco-American Ferment Co. is offering its Lactobacilline preparations direct to the public. The company has distributed circulars in which the public is informed that auto-intoxication is the cause of innumerable ills, that the Bulgarian bacillus is a "wonderful corrective or remedy" for such conditions and that the Lactobacilline products are—by inference—the only reliable products. In view of the action of the Franco-American Ferment Co. and the tendency to cause the public to exaggerate slight ailments into alarming conditions, the Council on Pharmacy and Chemistry has deleted the Lactobacilline products from New and Nonofficial Remedies (Jour. A. M. A., April 17, 1915, p. 1346).

Peacock's Bromides.—A report of the Council on Pharmacy and Chemistry points out that Peacock's Bromides (The Peacock Chemical Co.), said to contain the bromides of potassium, sodium, ammonium, calcium and lithium equivalent to 15 grains of potassium bromide per fluidram, is secret in composition in that the amount of the individual bromides is not stated. The report contradicts the asserted uniformity of the preparation and the claim of superiority. It questions the asserted advantage of a mixture of bromides over a simple bromide solution and holds that, if there were any advantages in prescribing such a mixture of bromides, the physician should regulate their proportions. The report further points out that the therapeutic claims are misleading and not in accordance with modern teachings and practice. Thus while the Peacock company advises the use of bromides in the treatment of epilepsy, the best clinical teaching advises the avoidance of bromides as far as possible (Jour. A. M. A., April 3, 1915, p. 1177).

Chionia.—A report of the Council on Pharmacy and Chemistry discusses the claims made for Chionia (The Peacock Chemical Co.) said to be "A Preparation of Chionanthus Virginica"—a drug

which is generally conceded to be worthless and which has been the subject of an unfavorable report of the Council. While claiming Chionia to be a "potent hepatic stimulant" the exploiters appear to appreciate its inefficiency, for it is advised to combine the nostrum with drugs of recognized potency such as the heart tonics and laxatives in passive congestion of the liver, mercurial purge, podophyllin or sodium phosphate in "Biliousness," etc. (Jour. A. M. A., April 3, 1915, p. 1178).

Hagee's Cordial.—The Council on Pharmacy and Chemistry reports that Hagee's Cordial of the Extract of Cod Liver Oil Compound (Katharmon Chemical Co.) has neither the nutritive qualities nor the reconstructive efficacy of cold liver oil and that it is worthless for the conditions for which it is advertised. Recent experiments having shown that cod liver oil, like butter and egg yolk, possesses certain growth-promoting properties not found in some other fats, the promoters of Hagee's Cordial claim these properties of cod liver oil for their extract. The Council has previously expressed the opinion that cod liver oil owes its value in the main or entirely to its fatty constituents. Now the Connecticut Agricultural Experiment Station has demonstrated that the growth-promoting properties of cod liver oil are not to be found in Hagee's Cordial (Jour. A. M. A., April 10, 1915, p. 1262).

Wampole's Preparation.—Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver (H. K. Wampole Co., Inc.) is marketed under a non-quantitative and therefore practically worthless statement of composition. Experiments carried out at the Connecticut Agricultural Experiment Station have demonstrated that the Wampole Preparation, which also contains extract of malt and sugar, does not possess the advantages over ordinary cod liver oil as a source of nutriment, as claimed. Neither did the Wampole preparation appear to possess to any marked degree the reconstructive properties of cod liver oil, butter fat and egg yolk. The Council on Pharmacy and Chemistry held Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver ineligible for New and Nonofficial Remedies because, contrary to claim, it lacks both the nutritive and reconstructive properties of cod liver oil and because it is marketed under an indefinite name and under unwarranted claims (Jour. A. M. A., April 10, 1915, p. 1262).

Veracolate.—The Council on Pharmacy and Chemistry reports that "Veracolate (plain)" (The Marcy Co., Boston, Mass.) is semi-secret in composition, unscientific in combination and exploited under unwarranted claims. It reports that the same criticisms apply to "Veracolate with Pepsin and Pancreatin" and "Veracolate with Iron, Quinine and Strychnine." For "Veracolate (plain)" the following non-quantitative formula is given: "A compound containing the bile acids, sodium glycocholate, sodium taurocholate with cascara sagrada and phenolphthalein." "Veracolate with Pepsin and Pancreatin" is said to contain, in addition to the indefinite "Veracolate," the two mutually incompatible ferments, pepsin and pancreatin, and oil of peppermint. The complexity of "Veracolate with Iron, Quinine and Strychnine" has increased so that this unscientific mixture is claimed to contain seven constituents. These products are discreditable to the medical and pharmaceutical profession alike and their use is against the public good (Jour. A. M. A., April 24, 1915, p. 1440).

ABSTRACT OF OFFICIAL RULINGS UNDER THE NEW FEDERAL NARCOTIC LAW.

Administration, external and internal.—Liniments, ointments, or other preparations containing drugs not specifically exempt, used for oral, nasal, aural, ocular, rectal, urethral, or vaginal administration are not in such cases used externally and are therefore not exempt from the provisions of this law.

Attendance (personal), definition of.—A physician, dentist, or veterinarian must actually be absent from his office and in personal attendance upon a patient in order to come within the exemption of section 2, paragraph A, of this law.

Charity organizations.—Not supported solely by the state, county, or municipality must register and pay the special tax and keep a record of drugs dispensed or distributed.

Consumers obtaining drugs.—A consumer, as such, will not be permitted to register under this law and can only obtain a supply of such drugs through a duly registered physician, dentist, or veterinarian.

Drugs dispensed, record of.—A physician or dentist who administers minute quantities of drugs coming within the scope of this law in his office may keep a record of the date when a stock solution is made and the date when such stock solution is exhausted without keeping a record of the name and address of each patient to whom such drugs are administered. This plan will be allowed, however, only in cases of those physicians and dentists who use minute quantities of these drugs, such as oculists, aurists, and other specialists; but where a physician engaged in a general practice otherwise administers such drugs it will be necessary for him to keep a record of the name and address of the patient, of all drugs dispensed, distributed, or administered in his office, and of such drugs left with a patient to be taken in his absence. Only such drugs as are personally administered by a physician to a patient when away from his office are exempt from record.

Educational institutions.—Any department of a university, college, or other educational institution using drugs coming within the scope of this law must register with the collector of internal revenue and pay the special tax. The dean of each department should sign the application for registry and the order blanks used to obtain a supply of these drugs. Such drugs used in a dental infirmary or laboratory should be recorded in a book kept for that purpose.

Exemption from registration.—Under the act government, state, county, and municipal officers, lawfully engaged in purchasing drugs, etc., specified in the act for the various departments of the Army and Navy, the Public Health Service, and for government, state, territorial, district, county, municipal, or insular hospitals or prisons are held to be exempt under section 1 and paragraph (d) of section 2 from the provisions of the act relating to registry and special tax to purchase and use of such drugs and to the keeping of records of the same. Any such officers, however, engaged in private practice must register, pay special tax and keep the records, and comply with all the requirements of the law and regulations.

Hospitals and sanatoriums must keep a record of drugs dispensed, distributed, or administered therein.

Inventories must be retained on file by person making same and not sent to the collector of internal revenue or the Treasury Department. Such inventories must be sworn to.

Name in full—Meaning.—A physician may sign prescriptions calling for drugs coming within the scope of this law the same as he would sign a check or legal document, i. e., J. H. Smith, John H. Smith, or John Henry Smith.

Nurses, status of.—Not allowed to register and can only have narcotic drugs in their possession

under direction of registered physician. Can only obtain supplies of such drugs upon registered physician's prescription and only when nursing patient of such physician.

Partnerships of physicians.—Where two or more physicians, dentists, or veterinary surgeons are in partnership, doing business under a firm name, it is necessary for the firm to be registered, the firm registry number to be indicated in ordering any of the drugs for use in the office practice of the members of the firm, each individual physician, dentist, or veterinary surgeon in such partnership should register and pay the special tax under his own name, if also engaged in private practice.

Physicians, dentists, and veterinarians practicing in more than one district.—If maintaining an office in more than one internal-revenue district must register in each district. If not maintaining more than one office registration in one district permits him to practice in any other district with but one registration.

Prescription blanks.—A physician, dentist, or veterinary surgeon can make use of any prescription blank, provided the same is properly dated and signed and has indicated thereon the physician's address, his registry number, and the name and address of the person for whom such prescription is written. The government does not furnish a form upon which prescriptions may be written and the special order form can not be used for this purpose.

Prescriptions, partial filling of.—Original prescriptions only can be lawfully filled by druggists, and the partial filling of such prescriptions, from time to time, where large quantities of drugs have been prescribed will, under no circumstances, be permitted.

Refilling prescriptions.—Only original prescriptions can be filled by druggists and apothecaries and can not be refilled without violating this law.

Registration, who eligible for.—The following persons legitimately engaged in the practice of their profession and dealers allowed by the state laws to handle narcotic drugs are eligible to registry under this law: Persons engaged in the practice of medicine and surgery, persons engaged in the practice of dentistry, persons engaged in the practice of veterinary medicine and surgery, persons engaged in the importation and sale of drugs, persons engaged in the manufacture and sale of drugs at wholesale, persons engaged in the manufacture and sale of drugs at retail.

An osteopath, therefore, or other person heretofore administering these drugs, if not classed as a physician in the state in which he resides, would not be permitted to register under this law.

Special-tax stamps.—Must be posted in a conspicuous place by every person registering under this law.

DAVID A. GATES,
Acting Commissioner of Internal Revenue.

THE MEDICAL PRACTICE ACT.

(Remarks in the Senate by Mr. F. H. Benson.)

Mr. President: This is the bill presented by the State Board of Medical Examiners. It is what is known as the "regular" or "orthodox" bill, and has the support of some seven thousand medical practitioners who yet cling to the belief that the practice of medicine is a science, and that the care of the human body is a function of sufficient importance to warrant careful regulation by the State. It has the support, too, in spite of the vigorous and misleading propaganda which has been conducted against it, of the overwhelming majority of the citizens of our state, and it is in their interest and for their protection, that the bill is advocated.

It would not seem necessary in an intelligent

gathering to pause in the discussion of a health measure to defend the members of the medical fraternity. It would seem that the wonderful part which the doctor has played in the history of mankind would protect him from promiscuous and vicious attack upon every occasion when he seeks to improve the standards of his high calling. But, unfortunately, such has not been the case. Through the activities of the most numerous and the most persistent lobby which has attended upon this legislature, an atmosphere has been created here in which the family doctor, whom we have long loved and revered, is made to appear as a self-serving opportunist, intent upon obtaining his own personal advantage at all hazards and oblivious of the rights or interests of all mankind.

Is this the doctor as you and I have known him? Has there come a time in your life when the one you held nearest and dearest went down into the valley of the shadow weakly clinging to the hand of your family physician? Have you known what it is to stand by the bedside of the one you loved—impotent, helpless and hopeless, save for your faith in your God and your confidence that the kindly man of medicine who hovered tenderly over her would fight with all of his heart and all of his brain, with all of his acquired skill and all of the skill he had inherited from the thousands who had fought this fight before him? Did you doubt then that the big issue with that now maligned medical man was the life or death of your loved one? Do you remember how through the travail of that long, long night he fought back the grim horror inch by inch, and with the break of dawn the clouds lifted just a little and your loved one came feebly out from the dark valley? Do you remember these things? Did the doctor seem to you then the crooked, selfish opportunist that he is now represented to be? Did he appear to you then as he is visualized to you today in the innuendos, the whispered scandals and the vicious jeers in which the opponents of this measure have so freely indulged?

This bill is presented by the regular physicians in conformity with a course which they have pursued with self-sacrificing and commendable zeal in their efforts to insure the highest degree of skill in those who are to minister to the afflictions and ailments of mankind. It is only a few years ago that the profession of medicine in the United States was at a standard so far below that of European countries that it was a matter of universal regret not only to the members of the profession, but to the intelligent public. It was generally recognized that for a man to become a first-class physician, or surgeon, a course in a European institution was essential. Such a course was impracticable to a sufficient number of medical men to supply the needs of our great population and, as a result, inadequate, inefficient and poorly conducted colleges, operated largely for purely financial ends, sprung up all over the country. These were popularly known as "diploma mills," and their operations not only attracted the attention of the general public, but also elicited the condemnation of the higher minded members of the medical profession. An effort was inaugurated to correct this condition. A propaganda for high standards in medical education was initiated, and the profession throughout the country became actively interested. Laws were passed in state after state which had for their object the abolishing of the "diploma mill," and the discouragement of the "short course" doctor. Probably no more efficient measure of this character has been enacted than the California medical law of 1913, which is the law which we are now seeking, in minor particulars, to amend. This law was largely the result of the earnest, persistent and intelligent efforts of Senator Jones, Senator Avey and Senator Mott, who devoted a large portion of their time during the last session of the California legislature to hearing the views

of representatives of various schools of medicine, and in framing a bill which would be fair to every school which honestly desired to meet a proper and adequate standard. In this they were so largely successful that an overwhelming majority of the educated practitioners in the state would not desire to see the bill radically changed.

There is opposition, however, to the measure. An opposition which has manifested itself in the numerous lobby which assails the members of this body at every possible opportunity. This opposition has centered its attack upon the bill in the amendment now presented proposing to deprive the State Board of Medical Examiners of the authority to approve institutions of medical learning before their graduates are allowed to present themselves for examination. It is argued with heat and vehemence that this approval by the Board is unnecessary, because the standards required by the institutions are written in the law; that is—so argue the proponents of this amendment—if the law itself requires an institution to give so many hours of instruction in each of the several essential branches then this requirement of the law should be the sole measure of the institution's eligibility to present its graduates for examination. That is, the standard having been legally established then there is no necessity for any provision authorizing the Board, or any other tribunal, to pass upon the question of whether or not the standard has been duly adhered to.

This opposition seems to me to have been arrived at by a process of reasoning which is extraordinary. If that theory is correct, then the fact that certain standards of conduct are by law written in the Penal Code is all that is necessary to insure the peace and dignity of the commonwealth. Why have policemen, district attorneys, judges and juries? Why should we give to these mere men the right to arbitrarily determine whether or not these rules of conduct have been observed? The standards are written in the law, and, being written in the law, their purposes are accomplished, and nothing further is required to prevent theft and violence than the knowledge that the standards are there so written. The mere statement of this proposition carries conviction of its absurdity. We write our standards of civil conduct in our Penal Code, but we maintain peace officers and the machinery of the courts to see that those standards are observed. We write in the law the standards required for medical colleges, and we give to our Board of Medical Examiners authority to see that these standards are adhered to.

If the standards of conduct written in our Penal Code are violated our courts declare the violation and penalize the offender. If the standards of medical colleges are not adhered to the State Board declares the violation of the standards and penalizes the offender by declining to allow its graduates to appear for examination. The provision seems just, and more than that, it seems necessary.

Senator Purkitt has demanded to know why I am not satisfied to eliminate the provision of the law requiring the approval of these institutions by the Board and leave it to a court of law to determine whether or not an institution has lived up to the legal standard. I will tell you why, Senator Purkitt. The court is not organized in a manner to properly determine the question as to whether or not certain studies are being taught adequately, or effectively, in an institution of learning. The only way of determining whether or not teaching is being properly done is for some one competent to judge to go and watch the teacher at work. Actual inspection by those learned in the branch being taught would bring more certain and satisfactory results than would tomes of testimony taken in court and digested by a lawyer on the bench, or layman in the jury box.

What has your profession and mine done, Senator Purkitt, which would justify the assumption that to it could be more safely left the determination of this question than to the members of the medical profession? What has our profession done that would place it so high above the profession of medicine that we should arrogate to ourselves the right to act as exclusive judges in matters that affect the healing art? Has our profession been so marked by progress and achievement that we are justified in assuming the incompetency of the members of the medical profession to control their own institutions? What achievement, Senator Purkitt, can the profession to which you and I belong point to which can approach the magnitude and magnificence, the heroic and self-sacrificing and tremendously important work of the medical men who gave their lives that the Panama Canal might be a possibility?

I know nothing of the various schools of medicine. The Allopath; the Homeopath; the Eclectic and the Osteopath, all or none of these may be right in their peculiar dogma, but I do know that there is no school, sect or cult in science; that truth, whether it concern medicine or mathematics, will not be confined to any particular or peculiar class or creed.

I believe that the man who is earnestly searching after truth and lends an attentive ear to the wisdom of those who have searched before him is apt to approach nearer to that which he seeks than the man who ignores all researches of the past and insists on building the structure of his knowledge upon the foundation which he has himself laid. The science of medicine, as it is known to the regular practitioner, is a great structure which has been built up year by year and century by century. It has profited by the achievements and by the errors of the past; it has tried out much that has been found wanting, but in its net results it is a science based upon long and intelligent research, careful and enormously extensive observation; and in its upbuilding the best and most capable men since the world began have been giving the best that was in them.

I cannot judge between the technical theories which may separate the men who are learned in this great science, but I can believe that it is unsafe to assume that the man without educational qualifications of his own, unguided by the experience of others and intolerant and narrow in his attitude, is a safe custodian of the lives and welfare of our citizens; nor can we safely leave the question as to the competency of the contending healers to the supposed beneficiaries of their various arts. I have known men of education and intelligence who loudly asserted that after the physician had failed to cure their ailments they had obtained instant and miraculous relief from a concoction of ground lizard and grasshopper legs, prescribed for them by the Oriental savant. I know a man, for whose ordinary intelligence I have the highest respect, who proudly displays a little black lump which was once a potato, as the potent talisman which for successive seasons has warded off his rheumatism; and to prevent this same malady there are concerns which turn out enormous numbers of German silver rings, which they sell at a large profit to the credulous. It is this credulity and tendency to surround the healing art with superstition which makes it so necessary to protect the public from becoming the prey of the charlatan. This can only be done by the maintenance of high standards for the members of the medical profession. So long as we continue to maintain these standards we may expect that those who fall below them will indulge in bitterness and recrimination; so long as the regular practitioner maintains ideals for his profession and strives to hold his profession up to those ideals, so long may he expect that his motives may be misconstrued and misrepresented.

At every session of the legislature we may ex-

pect that there will be persistent and vigorous efforts to tear down the standards which have been established. We may expect to be overwhelmed with stories of the failures of the learned medical profession and be regaled with wonderful stories of the achievements of the unlearned. Unfortunately, this has come to be an old story in the California legislature, and I am confident that this body would rather vote to raise, than to lower, the standard of medical education, and that those who are now complaining most bitterly against the provisions of the law which has operated against them, will, when they have earnestly and honestly attained the standards which have been set, be proud to number themselves among those who are striving to retain for the healing profession the glorious position to which its history, practices and aspirations entitle it.

STANDING OF GRADUATES OF CALIFORNIA MEDICAL SCHOOLS: PASSED AND FAILED.

	1908			1909			1910					
	P.	F.	%	P.	F.	%	P.	F.	%			
Univ. of Cal.....	15	3	83	16	9	0	100	0	5	0	100	0
Oakland Col. Med.	1	0	100	0	3	0	100	0	3	0	100	0
Cooper Med. Stan- ford	29	7	80	19	24	4	85	15	17	4	80	19
Coll. of Med. U.	13	14	48	51	27	5	84	15	8	0	100	0
So. Cal.....	3	4	42	57	8	6	57	42	4	1	80	20
Hahnemann Med. Coll.	18	12	60	40	4	10	28	71	16	4	80	20
Coll. P. & S., U. So. Cal.).....	6	18	25	75	15	10	60	40	11	9	45	65
Cal. Med. Coll., Eclectic	1	3	25	75	1	1	50	50	3	2	60	40
L. A. Coll. Osteo- pathy	0	1	0	100	11	5	68	31	32	17	65	34
Pac. Coll. Osteo- pathy	0	0	0	0	10	9	52	47	14	7	66	33
			1911			1912			1913			
Univ. of Cal.....	15	0	100	0	20	0	100	0	11	0	100	0
Oakland Col. Med.	0	0	0	0	6	0	100	0	4	0	100	0
Cooper Med. Stan- ford	25	2	92	7	30	3	90	9	10	1	90	10
Coll. of Med. U.	7	1	87	12	23	3	88	11	3	0	100	0
So. Cal.....	7	0	100	0	3	1	75	25	12	1	92	8
Hahnemann Med. Coll.	7	0	100	0	3	1	75	25	12	1	92	8
Coll. P. & S., (U. So. Cal.).....	1	1	50	50	2	0	100	0	21	1	95	5
Cal. Med. Coll., Eclectic	13	4	76	23	2	4	33	66	4	4	50	50
L. A. Coll. Osteo- pathy	1	1	50	50	0	0	0	0	2	4	33	66
Pac. Coll. Osteo- pathy	25	27	48	51	38	24	61	38	26	17	33	66
	17	10	62	37	8	6	57	42	6	6	50	50

MEDICAL CORPS OF THE UNITED STATES NAVY.

A candidate for appointment in the Medical Corps of the Navy must be a citizen of the United States, between 21 and 30 years of age, a graduate of a reputable school of medicine, and must apply for permission to appear before a Board of Medical Examiners. The application must be in the handwriting of the applicant, and must be accompanied by the following certificates:

(a) Letters or certificates from two or more persons of good repute, testifying from personal knowledge to good habits and moral character.

(b) A certificate to the effect that the applicant is a citizen of the United States.

(c) Certificate of preliminary education: The candidate must submit a certificate of graduation from an accepted high school or an acceptable equivalent.

(d) Certificate of medical education: This certificate should give the name of the school and the date of graduation.

(e) If the candidate has had hospital service

or special educational or professional advantages, certificates to this effect, signed by the proper authorities, should also be forwarded.

The applicant will save unnecessary correspondence if he will make sure when submitting his application that the qualifications enumerated above are clearly and plainly described in his letters or certificates.

EXAMINATION OF CANDIDATES FOR ASSISTANT SURGEON—PUBLIC HEALTH SERVICE.

Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, 3 "B" street, S. E., Washington, D. C., and at the Marine Hospitals of Boston, Mass., New York, N. Y., Chicago, Ill., St. Louis, Mo., Louisville, Ky., New Orleans, La., and San Francisco, Cal., on Monday, June 21, 1915, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Candidates must be not less than 5 feet, 4 inches, nor more than 6 feet, 2 inches, in height, with relatively corresponding weights.

The following is the usual order of the examinations: 1, Physical; 2, Oral; 3, Written; 4, Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate and that they will serve wherever assigned to duty.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists of examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital.

The examination usually covers a period of about ten days.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Assistant surgeons receive \$2,000, passed assistant surgeons \$2,400, surgeons \$3,000, senior surgeons \$3,500, and assistant surgeon generals \$4,000 a year. When quarters are not provided, commutation at the rate of \$30, \$40, and \$50 a month, according to the grade, is allowed.

All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitation to appear before the board of examiners, address "Surgeon-General, Public Health Service, Washington, D. C."

NEW MEMBERS.

Sewall, Chester D., San Francisco.
Fossum, Otto B., Cambria.
Wilmar, Alven H., Paso Robles.
Davis, A. L., San Francisco.
Cummins, W. F., San Francisco.
Converse, Geo. M., San Francisco.
Dolley, F. S., South San Francisco.
Hirschkowitz, Lesser, San Francisco.
Marks, Selby H., San Quentin.
Podstata, S. H., Livermore, Cal.
Allen, Warren V., Oakland, Cal.
Hinman, Frank, San Francisco.
Lisser, Hans, San Francisco.
Marvin, George D., San Francisco.
Waterman, Helen J., Berkeley, Cal.
Petr, Francis, Beaumont.
Farmer, Jessie C., San Francisco.
Saunders, Bertha A., Palo Alto.
Inman, T. G., San Francisco.
Rosencrantz, Esther, San Francisco.
Barnard, R. P., San Francisco.
Cohn, David, San Francisco.
Bybee, Addison, Livermore, Cal.
Shaw, Joseph Hughes, Santa Rosa.
Johnson, Wm. Henry, Santa Rosa.
Juell, N. R. H., Santa Rosa.
Blackshaw, J. B., Sebastopol, Cal.
Hamlin, R. E., Santa Rosa.
Belyea, J. H., Proberta, Cal.
Maggard, W. F., Corning, Cal.
Pringle, T. R., Woodlake, Cal.
Cahen, Caesar George, Los Angeles.
Walters, C. M. C., Los Angeles.
Allen, Edgar Mosher, Los Angeles.
Olds, Wm. Henry, Los Angeles, Cal.
Bowers, Chester Herbert, Los Angeles.
Reed, Edward North, Los Angeles.
Breitling, Carl Adolph, Azusa, Cal.
Saylin, Isaac, Exeter, Cal.
Happell, Jas. McAndrew, Lindsay, Cal.
Fahy, Jas. E., Los Angeles.
McKee, Wm. C., Los Angeles.
Burrows, C. A., Los Angeles.
Mills, Lloyd Hunter, Los Angeles.
Roberts, Ernest Eugene, Sawtelle, Cal.
Boody, Fred'k Joseph, Los Angeles.
Hoag, O. H., Santa Rosa.
Stevens, Chas. Sidney, Santa Barbara.
Cummins, W. T., San Francisco.
Powell, Wm. Arthur, Trinity Center, Cal.
Jones, J. Roy, Yreka, Cal.
Martinez, Lolita B., San Francisco.
Gay, Fred'k P., Berkeley, Cal.
Beckwith, Helen L., Berkeley.
Rea, Thos., Oakland.
Herbert, Gavin Shearer, Santa Paula.
Crawford, John, Santa Paula.
Desrosier, Geo. W., Maxwell, Cal.
Bransford, M. B., Grimes, Cal.

DEATHS.

McCracken, R. E., Oakland.
Claypole, Edith J., Oakland.
Randolph, J. A., Willows, Cal.
Hurlbut, E. T. M., address unknown (died in Yountville, Cal.)
Bucknall, M. E., (died in Los Angeles, Cal.)
Langau, Caroline Morrosco (von), died in Chicago, Ill.
Jenks, G. H., Oakland, Cal.
Henry, Joel F., Fruitvale.
Perce, Lewis A., Long Beach, Cal.
Hund, Otto H., San Francisco.
Gale, John A. (in address unknown), died in Los Angeles, Cal.